Indian and Northern Affairs Canada
Affaires indiennes et du Nord Canada

Mining Inspection Division, Yukon Region

YUKON
Placer Mining Industry
1998-2002

Canada

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YUKON
Placer Mining Industry
1998-2002

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Effective April 1, 2003, the administrative and regulatory control of the Mining Inspection Division transfers from Indian and Northern Affairs to the Yukon government. Its Department of Energy, Mines and Resources (EMR) will assume responsibility for Mining Inspections. After April 1, 2003, please contact EMR's Client Services and Inspections Branch at (867) 456-3882 for information or visit www.emr.gov.yk.ca/inspections/.

Available from:
Mining Inspection Division
Indian and Northern Affairs Canada
#345-300 Main Street
Whitehorse, Yukon, Canada, Y1A 2B5

Mining Inspection Division, Yukon Region invites readers to write and inform us of any inaccuracies or new information with respect to Yukon placer mining industry reports.

***Front cover photograph:** Rothschild no. 1 built by Marion Steamshovel Co., Marion, Ohio. Original caption read, "Canadian no. 1 first electric gold dredge to operate in Klondike at Bear Creek, 1902." Dawson Museum, 1984.17.4.35.*

***Back cover photograph:** Stuart Schmidt's operation on Indian River. The processing plant is a "New Zealand" style floating trommel.*

Preface

The Mining Inspection Division of the Northern Affairs Program, Department of Indian Affairs and Northern Development, is pleased to present the placer industry report for 1998-2002. This will be our last publication prior to devolving our responsibilities to the Government of the Yukon.

The publication's greatest asset has always been the site knowledge, photographs and articles provided by the miners. We sincerely thank them for taking time from their busy schedules to contribute to this report. We hope that all readers will find the book both interesting and informative.

The industry is entering another period of legislative and administrative change. Mining Inspections is committed to continuing its role in helping the industry to understand the requirements and to find acceptable, economical methods to comply with new policies and processes. Sustainable development and environmental stewardship have increased in profile in the last 25 years and mining practices have improved in response to these changing philosophies. We have seen the introduction of new legislation such as the *Yukon Waters Act*, Part II of the *Yukon Placer Mining Act* and Mining Land Use regulations. Miners have continued to cooperate with our staff under these new demands, for which we thank them.

Placer mining has always played an integral role in the development of the Yukon and will continue to influence our future success as a territory. As we pass through the first few years of the new century, we trust the industry will meet these new challenges with their usual spirit of innovation, inspiration and ingenuity.

On April 1, 2003 our division will devolve to the Department of Energy, Mines and Resources, Client Services and Inspections, Government of the Yukon. We welcome your comments on this publication under our new organization.

Mining Inspections will continue its role in educating and encouraging compliance with the placer mining industry under this new regime.

Thank you also to Wynne Krangle and Peter Long of K-L Services for their invaluable assistance in the layout of this publication.

Préface

La Division des services d'inspection minière du Programme des affaires du Nord (ministère des Affaires indiennes et du Nord canadien) est heureuse de présenter le rapport 1998-2002 sur l'industrie de l'exploitation des placers. Ce sera sa dernière publication avant de transmettre ses responsabilités au gouvernement du Yukon.

Le plus grand atout de la publication a toujours été les articles, les photographies et la connaissance des emplacements fournis par les prospecteurs. Nous les remercions sincèrement d'avoir pris le temps, malgré leurs programmes chargés, de contribuer au présent rapport. Nous espérons que tous les lecteurs trouveront le livre intéressant et instructif.

L'industrie entre dans une autre période de changements législatifs et administratifs. La Division des services d'inspection minière tient à continuer de jouer son rôle en aidant l'industrie à comprendre les conditions et à trouver des méthodes acceptables et économiques pour se conformer aux nouvelles politiques et aux nouveaux processus. L'importance du développement durable et de la gérance de l'environnement a augmenté au cours des vingt-cinq dernières années et les pratiques d'extraction se sont améliorées en réponse à ces changements de philosophie. Nous avons vu l'introduction de nouvelles lois telles que la *Loi sur les eaux du Yukon*, la partie II de la *Loi sur l'extraction de l'or dans le Yukon* et le Règlement sur l'utilisation des terres pour l'exploitation. Les prospecteurs ont continué à coopérer avec notre personnel pour suivre ces nouvelles exigences et nous les en remercions.

L'exploitation des placers a toujours joué un rôle fondamental dans le développement du Yukon et continuera à influencer la réussite de notre avenir comme territoire. Alors que nous traversons les premières années du nouveau siècle, nous espérons que l'industrie relèvera ces nouveaux défis avec son esprit habituel d'innovation, d'inspiration et d'ingéniosité.

Le 1er avril 2003, notre division passera au ministère de l'Énergie, des Mines et des Ressources (Services à la clientèle et inspections) du gouvernement du Yukon. Nous accepterons volontiers vos commentaires sur la présente publication dans le cadre de notre nouvelle organisation.

La Division des services d'inspection minière continuera à jouer son rôle auprès de l'industrie de l'exploitation des placers en faisant de l'éducation et en encourageant la conformité en vertu de ce nouveau régime.

Merci également à Wynne Krangle et à Peter Long de K-L Services, pour leur aide de valeur inestimable dans la mise en page de la présente publication.

Robert Thomson

A/Regional Manager
Mining Inspection Division
Mineral Resources Directorate
Northern Affairs Program, Yukon Region

Gestionnaire régional par intérim
Division des services d'inspection minière
Direction des ressources minérales
Programme des affaires du Nord, Région du Yukon

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Mayo
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Whitehorse Mining District
Big Creek-Nansen
Kluane
Gladstone
Kimberley
Dollis Creek
Livingstone
Sidney Creek
Little Atlin

This publication is dedicated to the memory of the late

Bob Leckie, Mining Inspector

* * *

May his standards of excellence continue to influence

the placer industry for all time.

Mineral Resources Directorate

A new organization will be forthcoming post-devolution. For posterity's sake, we include the members and organization of the Mineral Resources Directorate immediately prior to that event.

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Val Nuemeier, Mining Administration Officer

Introduction

This report documents the placer mining industry in the Yukon from 1998 to 2002. The information is presented in three sections.

The first section contains an overall view of staking activity, placer gold production and a breakdown of gold produced by creek.

The second section comprises a collection of general interest and historical articles, including a new segment describing the first Yukon placer mining reclamation award. The Robert E. Leckie Award for Outstanding Reclamation Practices was created in honour of Mayo Mining Inspector, Bob Leckie, who passed away in 1999. Details of the award and each year's winners is in this section.

The third section of the report contains detailed descriptions, locations and, in many cases, photographs of various placer mining operations visited by the Mining Inspection Division of the Mineral Resource Directorate during the course of duty.

Whenever possible, the narrative descriptions were compiled from information gathered from the industry. There was not the opportunity for these site descriptions to be edited by the individual miner and we apologize if there is any misleading or incorrect data. Some operations may not have been included if we were unable to contact the miner to complete the questionnaires. Others may seem oversimplified as we were unable to acquire the same level of detail.

The individual reports have been arranged by drainage basin. Streams within each basin are organized alphabetically and the properties on each creek are described in consecutive order from the mouth to the headwaters.

Each descriptive narrative includes the creek name, the operator, the water licence number (if applicable) and the years of operation. The site number included in the heading for each operation corresponds to a location on one of the placer mining area maps. Locations in latitude and longitude are indicative of the general area of the operation and are not definitive.

As the *Yukon Placer Mining Act*, Part 1, does not use the metric system in its calculation of assessment work for allowable credits, for the most part, British units of measure have been used. A conversion table is provided at the end of the publication.

Le présent rapport décrit la situation de l'industrie de l'exploitation des placers dans le territoire du Yukon pour les années 1998 à 2002 inclusivement. La publication se présente en trois sections principales.

Une vue d'ensemble des activités de jalonnement et de la production d'or alluvionnaire ainsi qu'une ventilation de l'or produit par ruisseau sont incluses dans la première section.

La deuxième partie comporte un recueil d'intérLt général et des articles historiques, notamment un nouveau segment décrivant le premier prix de restauration de placers du Yukon. Le prix Robert E. Leckie pour pratiques exemplaires en matière de restauration a été créé en l'honneur de l'inspecteur des exploitations minières de Mayo, Bob Leckie, qui est décédé en 1999. On trouvera les détails du prix et les gagnants de chaque année dans cette section.

La troisième et dernière section du rapport contient les photographies, les emplacements et les descriptions détaillées de diverses exploitations de placers visitées par la Division des services d'inspection minière de la Direction des ressources minérales dans l'exercice de ses fonctions.

Les descriptions ont été rédigées à partir de l'information recueillie auprès de l'industrie, dans la mesure du possible. Nous n'avons pas eu l'occasion de faire réviser ces descriptions d'emplacements par les prospecteurs concernés et nous nous excusons s'il y a des données trompeuses ou inexactes. Il se peut que quelques exploitations ne soient pas incluses si nous ne pouvions pas contacter le prospecteur pour remplir les questionnaires. Certaines descriptions peuvent également sembler trop simplifiées, dans les cas oj nous n'avons pas pu obtenir la mLme quantité de détails.

Les différents rapports sont présentés par bassin hydrographique. Les cours d'eau dans chaque bassin sont en ordre alphabétique et les propriétés pour chaque ruisseau sont décrites en allant de l'embouchure aux sources.

Chaque récit descriptif comprend le nom du ruisseau, l'exploitant, le numéro de permis d'utilisation de l'eau (s'il y a lieu) et les années d'exploitation. Le « N° d'emplacement » inclus dans le titre de chaque rapport correspond à un endroit sur une des cartes de la région d'exploitation des placers. Les latitudes et longitudes données désignent le secteur général de l'exploitation et ne font pas autorité.

Comme la partie 1 de la *Loi sur l'extraction de l'or dans le Yukon* n'emploie pas le système métrique dans son calcul des travaux d'évaluation pour les crédits permis, les unités de mesure britanniques ont été employées dans la plupart des cas. Une table de conversion figure en annexe.

Yukon placer mining industry, 1998-2002

An overview of activity and production

Between 1998 and 2002, the Yukon's placer mining industry was affected by a number of factors, originating both locally and globally. A steadily declining world gold price, and ever-increasing world oil prices, narrowed the profit margin of most Yukon placer mining operations during this time period.

In the face of these economic realities, placer miners have increasingly sought more efficient mining methods. The most popular of these include efficient sluice plants such as the "New Zealand" type floating trommels. Often only one piece of equipment (usually an excavator) is needed at one time while mining. Tailings are easily contoured after mining as the plant distributes the gravel conveniently after washing.

Locally, weather was one of the most important factors affecting placer mining operations. Although 1998 was average, the following year was unusually hot and dry, especially in central Yukon. This created water shortage problems in many Dawson Range and Klondike mining operations. Conversely, 2000 was unusually wet, and flooding caused problems with access to mine sites as well as difficulties maintaining tailings ponds. While 2001 was not as wet as the previous year, some flooding still occurred, especially later in the season. In 2002, an unusually cold spring resulted in a late start for many mining operations, however, the relatively warm fall that followed allowed many miners to compensate and extend their operating season.

A changing and uncertain regulatory regime undoubtedly had an effect on the Yukon's placer mining industry. The advent of Mining Land Use Regulations (Part 2 of the *Yukon Placer Mining Act*) during this period caused some initial disruption for some operators as miners adjusted to the new regulations.

Staking activity

After a small surge of activity in 1999, in the following three years the number of placer claims staked dropped to the lowest level since 1975 (Figure 1). During this same

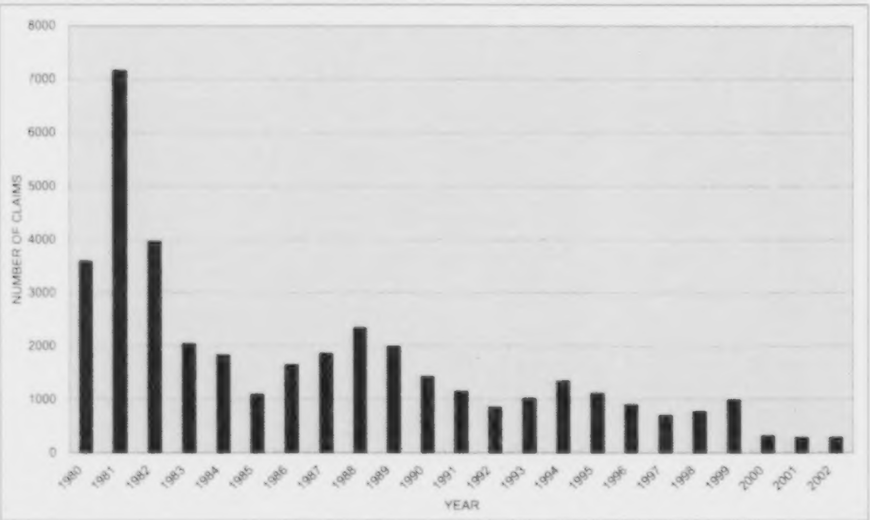


Figure 1. *Yukon placer claims staked, 1980-2002.*

Figure 2. Yukon placer leases staked, 1980-2002.

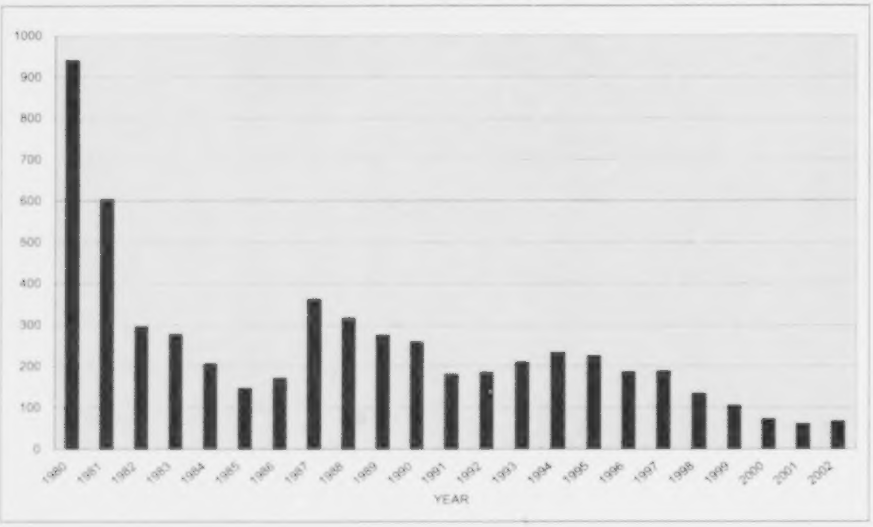


Figure 3. Yukon placer claims in good standing, 1980-2002.

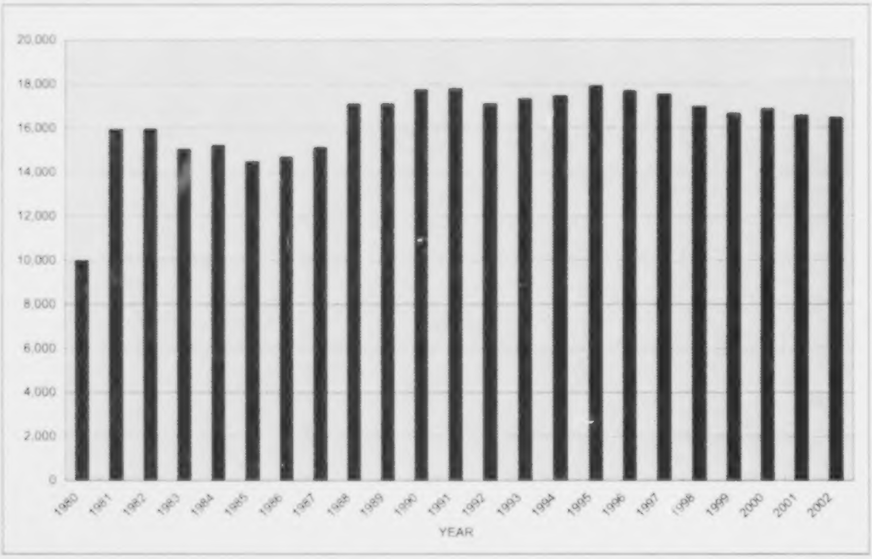
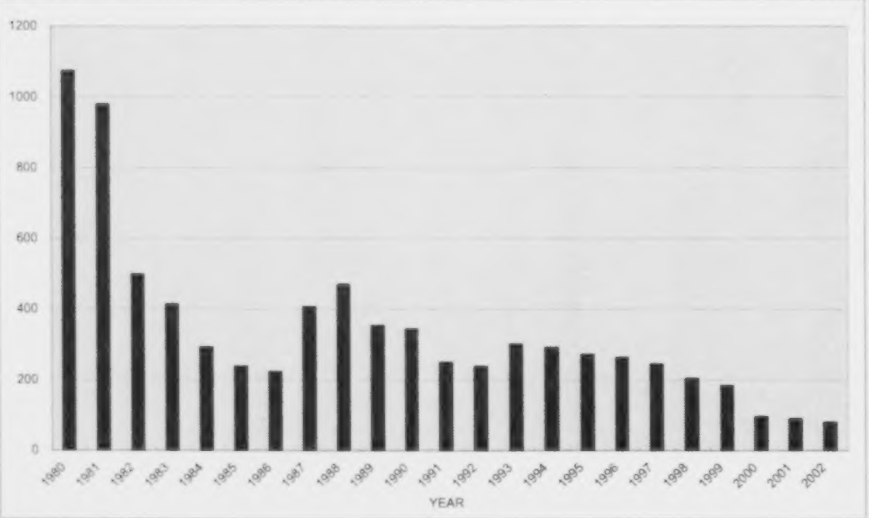


Figure 4. Yukon placer leases in good standing, 1980-2002.



period the number of placer leases staked dropped substantially to the lowest level since the late 1970s (Figure 2).

Although placer claims in good standing dropped slightly after 1998, overall there was little change (Figure 3). However, few new placer mines were developed as placer leases were allowed to expire and the amount remaining in good standing dropped to levels not seen since the 1970s (Figure 4).

Figure 5 shows that the total number of miles of Yukon placer ground held and the annual average price of gold in US dollars continued to have a close relationship between 1998 and 2002.

Active placer mines

The 1998 season saw 161 active placer mining operations, down ten from 1997. Although the number of operations didn't change much, many operations cut personnel, reducing to one shift instead of two, and in some cases high-grading ground to maximize profit in the face of low gold prices.

In 1999, the number of operations rose again to 171, which was reflected in a slightly higher amount of gold production.

The following years were marked by a steady decline in the number of placer operations, with 140 in 2000, 124 in 2001 and 115 in 2002. Continuing high fuel prices and low gold prices were at least partly to blame for this downturn.

Yukon placer gold production

As it has for more than 100 years, the Yukon's placer gold mining industry continued to make a significant contribution to the Yukon's economy between 1998 and 2002. Due to a number of factors including low world gold prices, however, production during this period dropped to its lowest level since 1979.

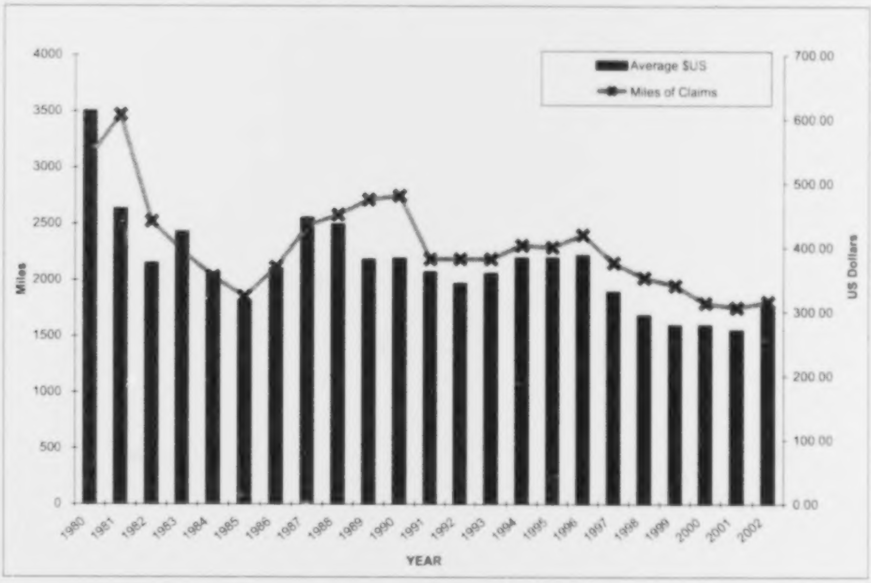


Figure 5. Miles of Yukon placer held versus gold price in U.S. dollars.

In 1998, the industry produced 87,488 crude ounces of gold (Figure 6). Based on an average grade of 800 fine, this is the equivalent of 69,990 fine ounces of gold valued at $30.55 million (CDN).

A total of 87,680 crude ounces of gold was produced during 1999, which was the equivalent of 70,144 fine ounces with a value of $29.08 million (CDN). As far as where in the Yukon the gold was produced, relative increases were seen in unglaciated Dawson district, while relative decreases were observed in Livingstone, Kluane, Dawson Range, Mayo and Clear Creek placer areas.

In 2000, gold production dropped to 76,507 crude ounces or 61,206 fine ounces. The total value of the gold decreased to $25.35 million (CDN).

In 2001, production slid to 70,819 crude ounces or 56,656 fine ounces worth $23.79 million (CDN). Relative production increases were seen in Klondike, Lower Stewart and Kluane areas, with decreases in all other placer regions.

Placer gold production hit a 23 year low in 2002, with only 66,347 crude ounces (53,078 fine ounces) recorded. Due to a surge in the world gold price this gold was worth more than the previous year's production, at $25.83 million (CDN). Relative production increases were seen in Klondike, West Yukon, and Mayo placer areas, and decreases were observed in Lower Stewart, Dawson Range, and Kluane areas.

Placer gold production by creek

Table 1 shows the 25 most productive creeks for 1998 to 2002.

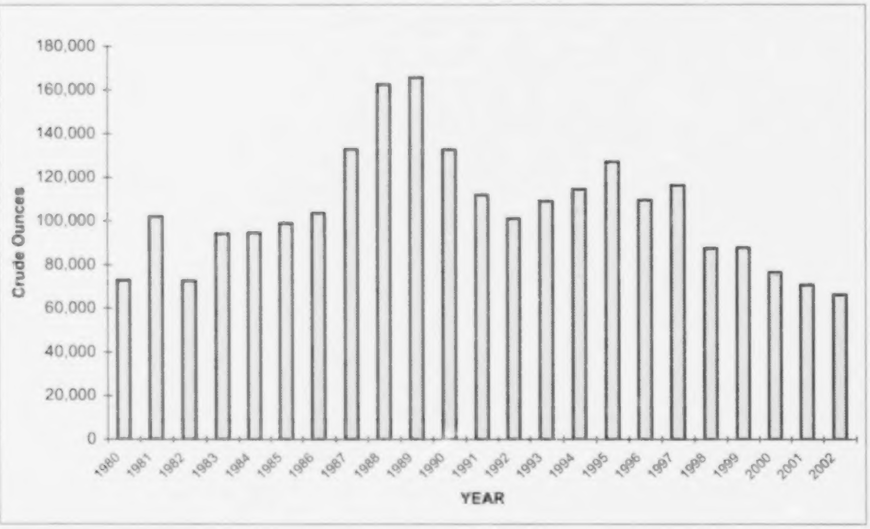


Figure 6. Yukon placer gold production, 1980-2002.

Table 1. Twenty-five most productive creeks, 1998-2002.

1998		crude ounces
1	Dominion Creek	15,731
2	Hunker Creek	10,185
3	Sixtymile River	8,403
4	Indian River	8,340
5	Sulphur Creek	5,508
6	Gladstone Creek	3,956
7	Black Hills Creek	3,804
8	Eureka Creek	3,181
9	Canadian Creek	3,008
10	Nansen Creek	2,975
11	Bonanza Creek	2,437
12	Duncan Creek	1,884
13	Clear Creek	1,724
14	Quartz Creek	1,576
15	Matson Creek	1,381
16	Haggart Creek	1,233
17	Ballarat Creek	1,001
18	Scroggie Creek	966
19	Highet Creek	892
20	Henderson Creek	883
21	Kate Creek	864
22	Gold Bottom Creek	816
23	Last Chance Creek	791
24	Klondike River	651
25	Livingstone Creek	519

1999		crude ounces
1	Dominion Creek	14,828
2	Sixtymile River	12,824
3	Hunker Creek	7,757
4	Indian River	6,800
5	Sulphur Creek	6,073
6	Eureka Creek	5,308
7	Canadian Creek	4,748
8	Black Hills Creek	3,543
9	Gladstone Creek	3,021
10	Eldorado Creek	2,515
11	Nansen Creek	2,278
12	Quartz Creek	1,824
13	Bonanza Creek	1,801
14	Duncan Creek	1,421
15	Henderson Creek	1,284
16	Last Chance Creek	1,074
17	Fourth of July Creek	1,060
18	Thistle Creek	863
19	Gold Bottom Creek	858
20	Kirkman Creek	783
21	Lightning Creek	778
22	Livingstone Creek	683
23	Klondike River	628
24	Kate Creek	624
25	Highet Creek	557

2000		crude ounces
1	Dominion Creek	15,084
2	Sixtymile River	10,396
3	Indian River	6,620
4	Hunker Creek	5,919
5	Sulphur Creek	5,523
6	Black Hills Creek	4,690
7	Eureka Creek	3,108
8	Last Chance Creek	2,295
9	Bonanza Creek	2,192
10	Canadian Creek	2,076
11	Gladstone Creek	1,884
12	Quartz Creek	1,345
13	Nansen Creek	1,313
14	Thistle Creek	1,262
15	Fourth of July Creek	1,116
16	Gold Bottom Creek	1,050
17	Duncan Creek	891
18	Gold Run Creek	860
19	Henderson Creek	725
20	Lightning Creek	626
21	Scroggie Creek	613
22	Burwash Creek	540
23	Lousetown Bench	408
24	O'Neil Gulch	406
25	Kate Creek	401

2001		crude ounces
1	Dominion Creek	12,733
2	Sixtymile River	8,540
3	Last Chance Creek	6,747
4	Black Hills Creek	6,424
5	Hunker Creek	6,364
6	Indian River	3,839
7	Sulphur Creek	3,473
8	Bonanza Creek	3,001
9	Gladstone Creek	2,919
10	Thistle Creek	2,772
11	Gold Run Creek	1,891
12	Fourth of July Creek	1,577
13	Quartz Creek	1,259
14	Henderson Creek	1,020
15	Scroggie Creek	954
16	Nansen Creek	934
17	Canadian Creek	752
18	Eureka Creek	623
19	Gold Bottom Creek	575
20	Back Creek	462
21	Mint Gulch	400
22	Swamp Creek	400
23	Lightning Creek	395
24	Clear Creek	276
25	Nugget Hill	232

2002		crude ounces
1	Dominion Creek	14,527
2	Sixtymile River	7,438
3	Hunker Creek	7,398
4	Thistle Creek	6,138
5	Last Chance	5,970
6	Sulphur Creek	3,688
7	Bonanza Creek	3,656
8	Gold Run Creek	2,452
9	Indian River	1,762
10	Gladstone Creek	1,518
11	Gold Bottom Creek	1,070
12	Lightning Creek	806
13	Henderson Creek	759
14	Scroggie Creek	750
15	Kate Creek	736
16	Fourth of July Creek	736
17	Quartz Creek	682
18	Back Creek	510
19	Black Hills Creek	480
20	Duncan Creek	471
21	Glacier Creek	452
22	Mechanic Creek	444
23	Miller Creek	382
24	Canadian Creek	369
25	Mint Gulch	246

World market gold price

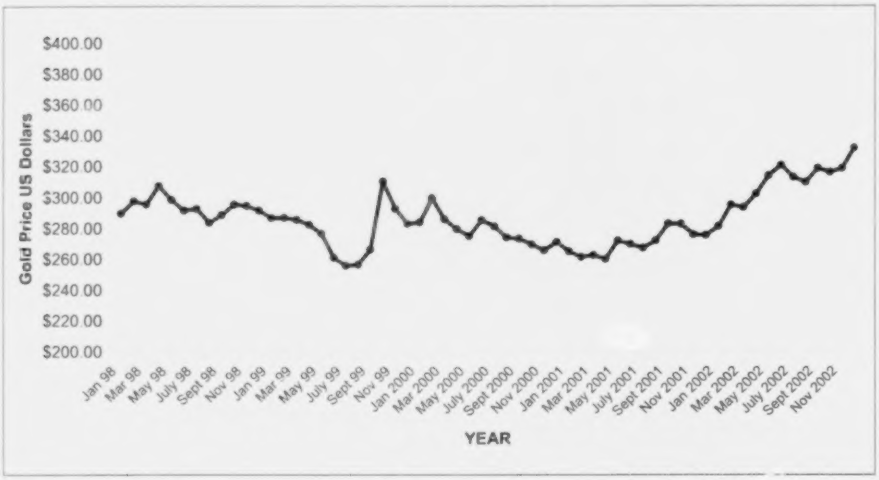
The world gold price remained below $300 US for much of 1998, averaging $294 US ($436 CDN)and peaking only once higher, at $308 US in April (Figure 7).

In 1999, the average gold price remained low at $279 US ($415 CDN), briefly surging to $310 in October.

In 2000, the average price remained constant at $279 US ($415 CDN), and this slowly declined throughout 2001 to average $271 US for that year. However due to a declining Canadian dollar the equivalent average price was $420 CDN for 2001.

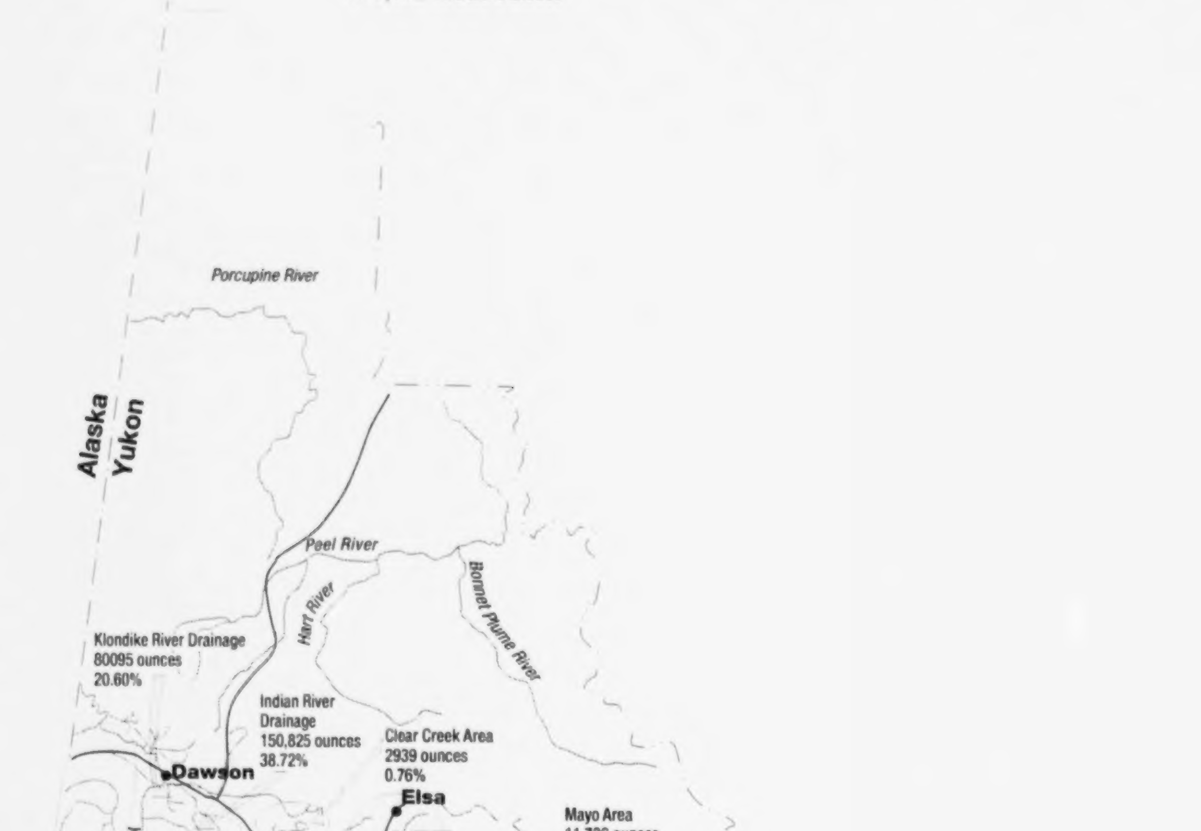
The following year, 2002, was marked by a steady increase in the gold price, from a low of $281 US in January to a peak at $332 US in December. The average for 2002 was a healthy $310 US or $487 CDN.

Figure 7. Average monthly gold price US dollars, 1998-2002.



Map of Yukon placer gold production, 1998-2002

Total recorded placer gold production 1998-2002
388,872 crude ounces


Porcupine River
Alaska
Yukon
Peel River
Hart River
Bonnet Plume River
Klondike River Drainage
80095 ounces
20.60%
Indian River
Drainage
150,825 ounces
38.72%
Clear Creek Area
2939 ounces
0.76%
Dawson
Elsa
Mayo Area
11,786 ounces
3.03%
Yukon River
Stewart River
Mayo
Lower Stewart Area
40,546 ounces
10.43%
Macmillan River
Sixtymile,
Fortymile
and Moosehorn
Drainages
56,143 ounces
14.41%
Dawson Range
22,673 ounces
5.83%
Pelly River
Carmacks
White River
Kluane
Lake
Aishihik
Lake
Yukon River
Teslin River
Lake
Laberge
Livingstone Area
1444 ounces
0.37%
Kluane Area
19,384 ounces
4.98%
Whitehorse
Whitehorse South
0 ounces
0.0 %
Bennett Lake
various creeks not shown
3039 ounces
0.78%

Placer gold produced from Yukon creeks, 1998-2002

(by mining district)

• in crude ounces

STREAM or RIVER	Tributary to...	1998	1999	2000	2001	2002	1998-2002
Dawson Mining District							
Allgold	Flat	0	0	1	0	0	1
Adams Gulch	Bonanza	0	0	0	0	0	0
Ballarat	Yukon	1001	0	0	0	0	1001
Barker	Stewart	84	0	0	0	0	84
Barlow	Clear	0	0	0	0	0	0
Bear	Klondike	51	335	0	0	0	386
Bedrock	Sixtymile	0	0	0	0	0	0
Big Gold	Sixtymile	0	0	0	0	0	0
Black Hills	Stewart	3804	3543	4690	6424	480	18,942
Bonanza	Klondike	2437	1801	2192	3001	3656	13,087
Brewer	Stewart	0	0	0	0	0	0
Caribou	Dominion	0	0	0	106	243	349
Clear	Stewart	1724	481	244	276	214	2939
Dominion	Indian	15,731	14,828	15,084	12,733	14,527	72,904
Eldorado	Bonanza	352	2515	393	0	0	3260
Excelsior	Yukon	0	0	0	0	0	0
Eureka	Indian	3181	5308	3108	623	37	12,257
Fortymile	Yukon	398	77	12	1	0	488
Foster Gulch	Klondike	0	0	0	0	0	0
Frisco	Yukon	0	0	0	26	0	26
Gay Gulch	Eldorado	0	0	0	0	0	0
Glacier	Sixtymile	469	133	100	0	452	1154
Gold Bottom	Hunker	816	858	1050	575	1070	4368
Gold Hill	Bonanza	0	0	0	0	0	0
Gold Run	Dominion	308	318	860	1891	2452	5828
Henderson	Stewart	883	1284	725	1020	759	4672
Hester	Hunker	0	0	0	19	42	61
Hobo	Klondike	0	0	0	0	0	0
Homestake Gulch	Upper Bonanza	0	0	77	52	33	162
Hunker	Klondike	10,185	7757	5919	6364	7398	37,622
Independence	Hunker	0	0	0	30	65	95
Indian	Yukon	8340	6800	6620	3839	1762	27,361
Josephine	Yukon	0	0	0	0	0	0
Kirkman	Yukon	435	783	0	0	0	1218
Klondike	Yukon	651	628	341	82	121	1822
Last Chance	Hunker	791	1074	2295	6747	5970	16,877
Little Blanche	Quartz	0	0	274	183	167	624
Little Gold	Sixtymile	0	0	0	48	159	207
Lousetown Bench	Yukon	0	0	408	62	0	471
Maisy May	Stewart	0	0	0	22	25	47
Matson	Sixtymile	1381	508	0	0	157	2046
Miller	Sixtymile	0	0	0	1	382	383
Mint Gulch	Hunker	0	0	0	400	246	646
Montana	Indian	0	0	202	162	188	552
Moose	Fortymile	100	258	185	25	191	759
Nugget Hill	Hunker	0	0	172	232	0	404
O'Neil Gulch	Upper Bonanza	0	0	406	0	0	406
Poker	Fortymile	0	0	0	0	0	0
Quartz	Indian	1576	1824	1345	1259	682	6686
Scroggie	Stewart	966	60	613	954	750	3343
Sestak	Yukon	0	0	0	0	0	0
Seven Pup	Victoria Gulch	0	0	59	12	0	71
Sheep	Firth	0	0	0	0	0	0
Sixtymile	Yukon	8403	12,824	10,396	8540	7438	47,601
Sparkling	Yukon	36	0	0	0	0	36
Squaw	Clear	0	0	0	0	0	0
Sulphur	Dominion	5508	6073	5523	3473	3688	24,265
Tenmile	Sixtymile	0	0	0	100	0	100
Thistle	Yukon	143	863	1262	2772	6138	11,178
Thomas	Klondike	0	0	0	0	0	0

continued...**Placer gold produced from Yukon creeks**

- in crude ounces

STREAM or RIVER	Tributary to...	1998	1999	2000	2001	2002	1998-2002
Dawson Mining District							
Too Much Gold	Klondike	0	0	0	0	0	0
Upper Bonanza	Bonanza	113	37	114	11	12	287
Victoria Gulch	Upper Bonanza	0	0	68	0	0	68
80 Pup	Hunker	0	0	0	0	0	0
various Dawson creeks		986	167	490	290	87	2020
Total Dawson District		**70,853**	**71,137**	**65,226**	**62,354**	**59,591**	**329,161**
Mayo Mining District							
Anderson	Mayo Lake	19	6	246	9	47	327
Bear	McQuesten	0	0	0	0	108	108
Carlson	Minto	0	0	0	0	0	0
Davidson	Mayo River	346	21	23	0	38	428
Dawn	Mayo Lake	0	0	0	0	0	0
Dirksen	Mayo Lake	0	0	31	0	0	31
Dublin Gulch	Haggart	0	0	0	0	0	0
Duncan	Mayo River	1884	1421	891	217	471	4883
Empire	No Gold	0	0	0	0	0	0
Gem	Sprague	0	0	0	0	0	0
Haggart	McQuesten	1233	6	0	0	0	1239
Highet	Minto	892	557	20	25	54	1548
Hope Gulch	Lightning	0	0	0	0	0	0
Johnson	McQuesten	0	0	0	0	0	0
Ledge	Mayo Lake	0	0	0	0	0	0
Lightning	Duncan	0	778	626	395	806	2604
McQuesten	Stewart	0	0	0	77	0	77
Minto	Mayo River	0	0	0	7	0	7
Morrison	Seattle	0	0	0	0	0	0
Owl	Mayo Lake	0	0	0	0	61	61
Rodin	South McQuesten	0	0	0	0	0	0
Russell	Macmillan	0	0	0	0	0	0
Sabbath	Johnson	0	0	0	0	0	0
Seattle	McQuesten	0	0	0	0	0	0
Steep	Mayo Lake	0	0	0	0	61	61
Stewart	Yukon	13	0	0	13	0	26
Swede	Haggart	0	6	0	0	48	54
Thunder	Lightning	330	0	0	0	0	330
Vancouver	McQuesten	0	0	0	0	0	0
various Mayo creeks		0	0	8	0	0	8
Total Mayo District		**4717**	**2795**	**1846**	**742**	**1694**	**11,794**
Whitehorse Mining District							
Arch	Donjek	0	0	0	0	0	0
Back	Victoria	0	227	314	462	510	1513
Big Salmon	Yukon	0	0	0	0	0	0
Boliden	Big	64	47	65	0	0	176
Burwash	Kluane	160	362	540	185	222	1469
Canadian	Britannia	3008	4748	2076	752	369	10,953
Casino	Dip	0	0	0	0	0	0
Cottoneva	South Big Salmon	0	0	0	0	0	0
Discovery	Nansen	0	0	0	0	0	0
Dollis	Tatshenshini	0	0	0	0	0	0
Dolly	Nansen	0	0	20	0	0	20
East Fork Nansen	Nansen	0	0	175	0	0	175
Fourth of July	Jarvis	0	1060	1116	1577	736	4489
Gladstone	Kluane Lake	3956	3021	1884	2919	1518	13,299
Great Bear	Lesaux	0	0	0	0	0	0
Guder	Seymour	0	0	0	0	0	0
Happy	Big	0	0	60	157	118	336
Hayes	Selwyn	0	0	0	0	0	0
Hayes tributaries	Selwyn	0	8	0	0	0	8

continued...**Placer gold produced from Yukon creeks**

- in crude ounces

STREAM or RIVER	Tributary to...	1998	1999	2000	2001	2002	1998-2002
Whitehorse Mining District							
Kate	Ladue	864	624	401	184	736	2809
Kenyon	Scottie	0	0	0	0	0	0
Kimberly	Jarvis	13	0	18	22	11	65
Klaza tributaries	Nisling	0	0	0	0	0	0
Lake	South Big Salmon	25	0	0	0	0	25
Little Violet	South Big Salmon	0	0	34	0	56	90
Livingstone	South Big Salmon	519	683	47	0	0	1249
Martin	South Big Salmon	0	0	0	0	0	0
Mechanic	Big	0	0	0	126	444	570
Mendocina	South Big Salmon	0	0	0	0	0	0
Moose Brooke	Lubbock/Atlin	0	0	0	0	0	0
Moosehorn Range	Kenyon/Tanana	0	0	0	0	0	0
Nansen	Nisling	2975	2278	1313	934	230	7729
Porcupine	Donjek	0	0	0	0	0	0
Printers	Cultus	0	0	0	0	0	0
Quill	Kluane	0	0	0	0	0	0
Unnamed	South Big Salmon	0	0	0	0	0	0
Reed	Donjek	0	0	0	0	0	0
Revenue	Big	173	532	203	0	0	908
Ruby	Jarvis	0	0	0	0	62	62
Rude	Dip	69	0	0	0	0	69
Seymour	Big	22	51	89	6	0	168
Sonora	Hayes	0	0	0	0	0	0
South Big Salmon	Big Salmon	0	0	0	0	0	0
Soya	Swamp	0	0	0	0	0	0
Squirrel	Duke	0	0	0	0	0	0
Stoddart	Big	0	0	0	0	0	0
Summit	South Big Salmon	0	80	0	0	0	80
Swamp	Scottie	0	0	198	400	0	598
Swede Johnson	Kluane	0	0	0	0	0	0
Tatshenshini	Alsek	0	0	0	0	0	0
Victoria	Nisling	0	0	0	0	48	48
Wheaton	Lake Bennett	0	0	0	0	0	0
various Whitehorse creeks		100	27	884	0	0	1011
Total Whitehorse District		**11,948**	**13,748**	**9436**	**7724**	**5062**	**47,917**
Firth	Arctic Ocean			0		0	0
Watson Lake Mining District							
Liard River		0	0	0	0	0	0
various Watson Lake creeks		0	0	0	0	0	0
Total Watson Lake District		**0**	**0**	**0**	**0**	**0**	**0**
Summary of placer gold production							
Dawson Mining District		70,853	71,137	65,226	62,354	59,591	329,161
Mayo Mining District		4717	2795	1846	742	1694	11,794
Whitehorse Mining District		11,948	13,748	9436	7724	5062	47,917
Watson Lake Mining District		0	0	0	0	0	0
Total		**87,518**	**87,680**	**76,508**	**70,820**	**66,347**	**388,872**

FINENESS OF YUKON PLACER GOLD

DAWSON MINING DISTRICT	FINENESS
Adams Gulch	615-746
Allgold Creek	858-860
American Gulch	864
Anderson Creek (Fortymile area)	720-728
Ballarat Creek	852-860
Barker Creek	793-900
Barlow Creek	853
Bear Creek	644-746
Bedrock Creek	820
Big Gold Creek	847-854
Black Hills Creek	730-855
Blueberry Creek	880
Bonanza Creek Benches	
American Hill	864
Cheechako Hill	750-785
King Solomon Hill	785-800
Trail Hill	800-805
Bonanza Creek	
Upper	809-827
Middle	781
Lower	739-798
Brewer Creek	
Brimstone Gulch	830
Browns Creek	800
Bruin Creek	800
Caribou Creek	816-840
Childs Gulch	750
Claffey Pup	750
Clear Creek	820-860
Left Fork Clear Creek	730
Right Fork Clear Creek	720-740
Discovery Pup	700
Dominion Creek	
Upper	805-832
Middle	817-849
Lower	790-840
Eighty Pup	797
Eldorado Creek	733-803
Eldorado Creek Benches	
Gold Hill	768
Empire Creek	910
Eureka Creek	677-745
Fortymile River	814-845
Fortynine Pup	
French Gulch	631-750
Friday Gulch	790-804
Gauvin Gulch	664
Gay Gulch	780-790
Glacier Creek	830-860
Gold Bottom Creek	780-800
Gold Run Creek	830-878
Goring Creek	738
Henderson Creek	720-760

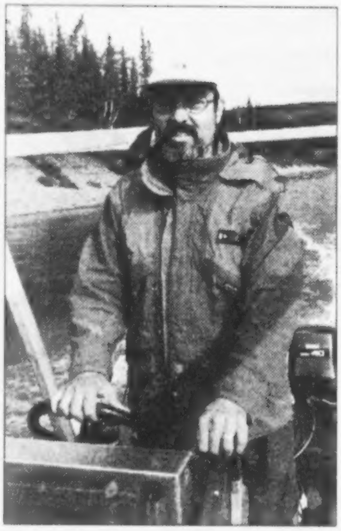
DAWSON MINING DISTRICT	FINENESS
Henry Gulch	605-650
Hester Creek	850
Homestake Gulch	660-750
Hunker Creek Benches	
Australian Hill	850-860
Dago Hill	798-859
Paradise Hill	735-802
Hunker Creek	
Upper	798-859
Middle	725-820
Lower	701-726
Independence Creek	780-794
Indian River	780-843
Irish Gulch	624-742
Jackson Gulch	829-842
Kirkman Creek	860-896
Klondike River Benches	
Dawson Hill	790-825
Groetschier Bench	790-825
Jackson Hill	835
Klondike City	780-790
Last Chance Creek	683-832
Little Gold Creek	860
Little Blanche Creek	650-710
Log Cabin Creek	850-895
Lombard Pup	860
Lovett Gulch	860
Maisy May Creek	780-782
Mariposa Creek	895-900
Matson Creek	776-893
Miller Creek	827-857
Mint Gulch	820-851
Montana Creek	770
Monte Cristo Gulch	784-796
Moose Creek (Fortymile area)	855
Oro Grande Gulch	775
Quartz Creek	732-800
Ready Bullion Creek	710-717
Rosebute Creek	800-810
Scroggie Creek	895-905
Sestak Creek	810-815
Seven Pup	790-850
Sixtymile River	810-840
Sparkling Creek	880
Stewart River	837-850
Sulphur Creek	790-832
Ten Mile Creek	830-845
Thistle Creek	848-895
Victoria Gulch	807-820
15 Pup (Last Chance Creek)	700
27 Pup (Hunker Creek)	845
27 Gulch (Eldorado Creek)	750
65 Pup	960

MAYO MINING DISTRICT	FINENESS
Anderson Creek (Mayo Lake area)	870
Boulder Creek	800
Canyon Creek	825
Davidson Creek	840
Dublin Gulch	860-923
Duncan Creek	792-802
Fifteen Pup	876
Fisher Gulch	900
Gem Gulch	895
Gill Gulch	870
Haggart Creek	885-895
Johnson Creek	760-820
Ledge Creek	805-825
Lightning Creek	830
McQuesten River	870
Minto Creek	827-835
Murphy's Pup	800-900
Russell Creek	850
Steep Creek	931-946
Swede Creek	895
Thunder Gulch	790-825

WHITEHORSE MINING DISTRICT	FINENESS
Arch Creek	870
Back Creek	760-836
Boliden Creek	890
Bullion Creek	871
Burwash Creek	860-876
Canadian Creek	864-883
Cottoneva Creek	830
Discovery Creek	820-850
Eva Creek	790
Fourth of July Creek	810
Gladstone Creek	820
Guder Creek	838
Hayes Creek	860-880
Highet Creek	820-845
Kate Creek	820
Kenyon Creek	750
Kimberley Creek	850-860
Klaza River (unnamed tributaries)	760-830
Lake Creek	895
Little Violet Creek	866
Livingstone Creek	880
Martin Creek	870
May Creek	892
Mechanic Creek	880-910
Moose Brooks Creek	820-837
Moosehorn Range	820
Nansen Creek	800
Quill Creek	878
Reed Creek	889-896
Revenue Creek	860-880
Rude Creek	840-850
Rusk Creek	830
Seymour Creek	860
Slate Creek	800
Squaw (Dollis) Creek	834
Swamp Creek	800
Tatshenshini River	850-866
Victoria Creek	720-730
Wade Creek	900-930

Robert E. Leckie Award for
OUTSTANDING RECLAMATION PRACTICES

In 1999, the Mineral Resources Directorate of the Department of Indian Affairs and Northern Development established awards for outstanding reclamation practices in both quartz and placer mining. The award is granted to worthy recipients for reclamation and site restoration efforts that are exceptional, such as the reclaiming of land for which they had no obligation to rehabilitate, adding features to the land that notably enhanced the area and local community, or by returning mined land to a condition that is not only structurally sound but aesthetically pleasing.



Robert Leckie

This award is proudly named after Robert (Bob) Leckie who served as the Mayo District Mining Inspector from 1987 until his death from cancer in 1999. Bob was born and raised in Calgary, Alberta, and, after graduating from the University of Calgary with a Master's Degree in Environmental Sciences in 1984, he and his wife moved to a property near Mayo, Yukon to pursue his passion for the field of alternate energy and growing in northern latitudes. From 1986-1999, Bob designed and built an energy efficient commercial greenhouse incorporating systems of his design including solar, waste oil and sub-floor heating. The system was powered entirely "off the grid" by a water turbine fed by a hand-built mile-long waterline from McGinty Creek. Several research papers were produced on the feasibility of energy efficient greenhouses in the north.

In 1987, Bob took a seasonal job as the mining inspector in Mayo where he put to use his considerable skills and background in Geography and Environmental Science. During Bob's tenure as mining inspector, he became a well-respected figure, both within the industry and with his colleagues, as the level head committed to finding creative solutions to perceived impasses.

Bob was dedicated to developing responsible land use practices for mining, while ensuring that the requirements were practical and possible for the miners to accomplish. He took on the job of educating area miners as to the benefits of thoughtful reclamation practices and, due to his well-reasoned approach, he was met with little resistance. Bob was also instrumental in implementing research projects aimed at defining acceptable standards for placer mining discharge and spent several summers supervising these projects

One of the graduate students who worked with Bob noted in eulogy that Bob would be remembered most of all for simply being who he was. "Ambitious, yet thoughtful, confident, yet unassuming and, above all, trusting. Bob made us want to stretch ourselves to realize our own hopes while remaining peaceful and happy in the process. In his life he demonstrated that the human experience was not so much about achieving goals as it was about the sights seen along the way."

Bob's forward thinking, innovative approach to problem solving and tendency to go beyond expectations for a better finished product, combined with his valuable contributions to the department and the industry, are remembered in this annual award to miners who have themselves done outstanding work for the betterment of the whole.

We are proud to include the 1999 to 2002 recipients of this prestigious award on the following pages, including a special long-time achievement award presented to Ross Mining Ltd.

1999

Robert E. Leckie Award for OUTSTANDING PLACER MINING RECLAMATION PRACTICES

presented to

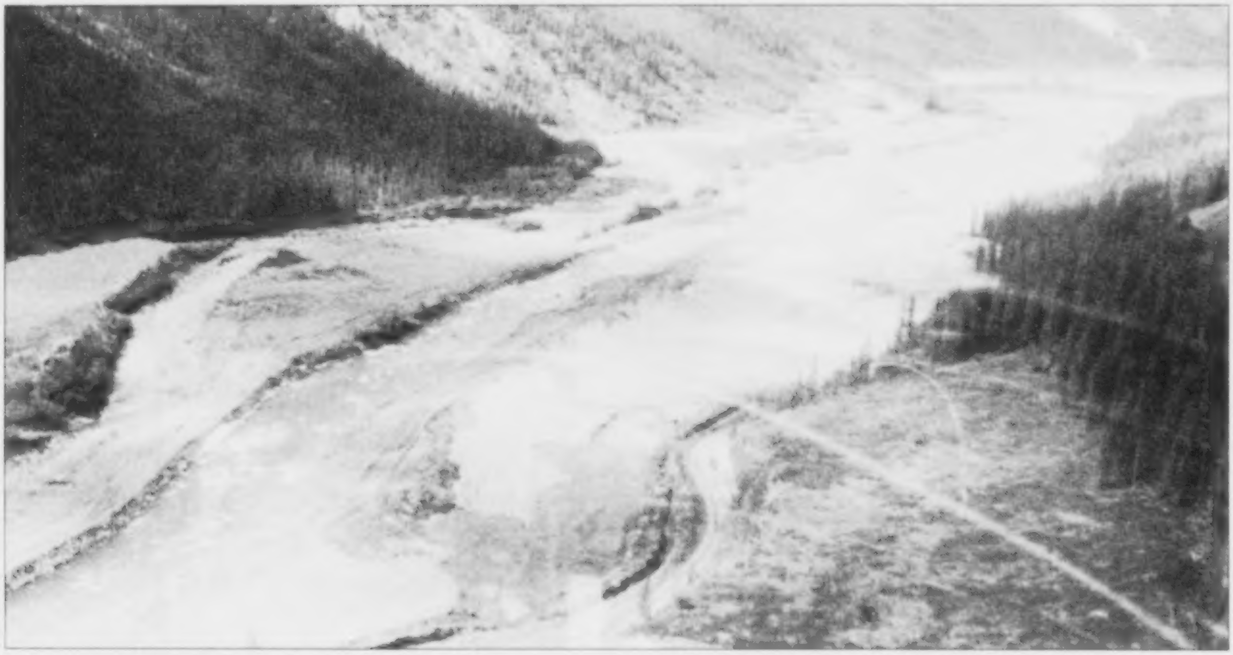
AL DENDYS

Tic Exploration

AL DENDYS has been mining on Gladstone Creek (which flows into the eastern shore of Kluane Lake) since 1992, using two floating trommel wash plants. These plants operate almost 23 hours a day, processing a large volume of pay material.

The large-scale disturbance resulting from an operation of this size has been mitigated by excellent restoration work. The most impressive characteristic of this work is how quickly it follows extraction of the ore.

Immediately following work in any given area, the tailings have been levelled, re-contoured and covered with fine material stockpiled during preparation of the mining cut. To date, this is the finest example of progressive placer mining restoration work in the Whitehorse Mining District.



Tic Exploration operation, Gladstone Creek.

2000

Robert E. Leckie Award for
OUTSTANDING PLACER MINING RECLAMATION PRACTICES

presented to

DAVE MARSTARS

Grew Creek Ventures Ltd.

DAVE MARSTARS has been placer mining on Hunker Creek since 1998. This property has been mined by other placer miners since the turn of the century, however it has never previously been reclaimed.

Reclamation work during 1999 and 2000 included cleaning up abandoned debris and waste petroleum products from previous miners, contouring of tailings from the current operation and all previous operations to a gentler topography, and spreading of black muck over the contoured tailings to promote rapid re-vegetation. In addition, a wide, stable stream channel was established and small out-of-stream ponds were created to enhance the local habitat.

This operation provides an exceptional example of corporate stewardship of the land. The affects of over a century of mining will not be recognizable thanks to the efforts of Grew Creek Ventures Ltd.

Contoured tailings at Hunker Creek are covered with black muck to enhance natural revegetation.

2001

Robert E. Leckie Award for
OUTSTANDING PLACER MINING RECLAMATION PRACTICES

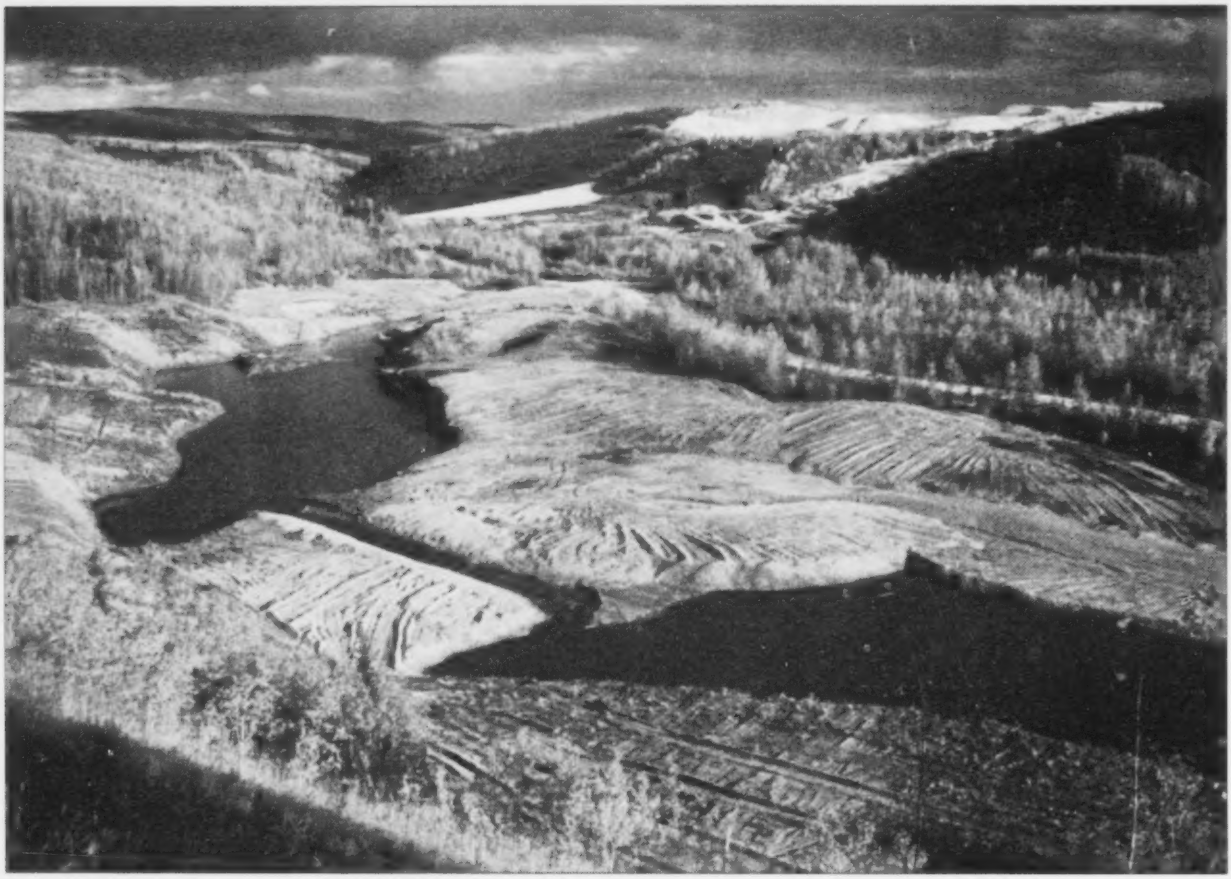
presented to

DOUG BUSAT

T.D. Oilfield Services Ltd.

T.D. Oilfield Services Ltd. has been placer mining near the mouth of Hunker Creek in the Klondike since 1997, using conventional mining methods. Methodical and progressive reclamation practices have taken place at this site since mining began. The restored landscape represents a better than natural terrain, incorporating wetlands and grasslands. The ponds are aesthetically pleasing and provide a waterfowl and wildlife habitat, as well as a recreational area for people.

For the many tourists and local people who drive the Klondike placer loop road, the property is an excellent example of responsible placer mining practices.



This landscape, part of the T.D. Oildfield Services Ltd. operation, can be easily viewed from the much travelled Hunker road.

2001

Robert E. Leckie Award for
LONG TIME ACHIEVEMENT IN MINE RECLAMATION

presented to

NORMAN ROSS

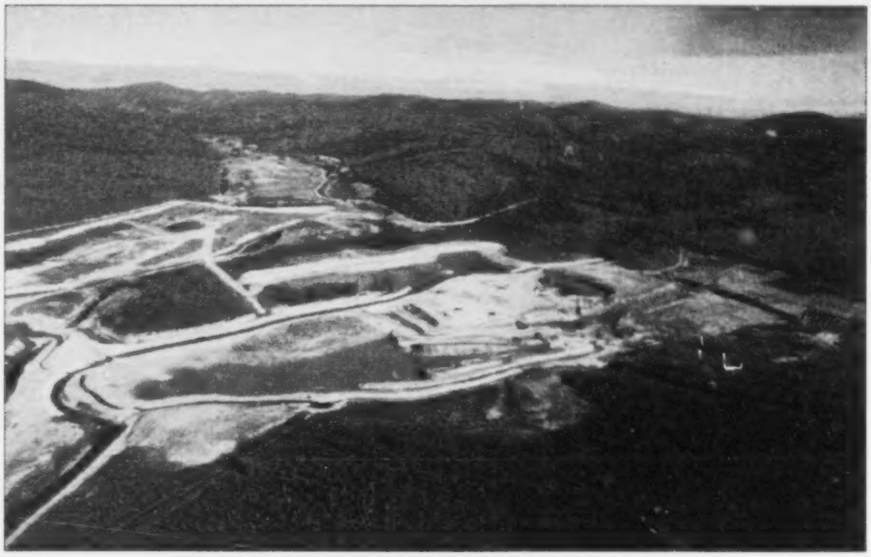
Ross Mining Ltd.

NORMAN ROSS of Ross Mining Ltd. was honoured in 2001 by the Department of Indian Affairs and Northern Development and the placer industry for his long-time devotion to sustainable mining practices. Reclamation by Ross Mining consistently exceeded what was required by legislation. Mr. Ross's land-based reclamation program was in place long before the Mining Land Use Regulations were passed in 1998.

Annual reclamation has been a part of the company's operation since it began placer mining on Dominion Creek in the early 1980s. Mined-out areas have been methodically reclaimed, resulting in a landscape with vegetated rolling hills, small lakes and stable and productive stream reaches. The wetlands are favoured by migratory wildlife, and several moose return annually to calve in the willow-rich area.

For two decades, Mr. Ross has dedicated much of his time as a spokesperson for the mining industry. In the 1980s he gave frequent presentations to gold miners on ways to plan for and minimize the costs of land reclamation and stream restoration. He has accommodated many local and foreign government officials and private investors on tours of his operation and has shared his knowledge of good mining practices in the Yukon. Mr. Ross has volunteered over many years as Director and President of the Klondike Placer Miners Association and has participated on various committees to help ensure the development of balanced legislation (Yukon Mining Advisory Committee and the Yukon Placer Committee).

We offer our sincere congratulations to the recipient of this special reclamation award in recognition and appreciation for Mr. Ross's dedication to promoting the development of a sustainable, competitive and healthy placer mining industry whose practices uphold the socio-economic and environmental values of the Yukon.



Ross Mining Ltd. on Dominion Creek, with currently mined areas in the foreground and reclaimed ground in the bcackground.

2002

Robert E. Leckie Award for
OUTSTANDING PLACER MINING RECLAMATION PRACTICES

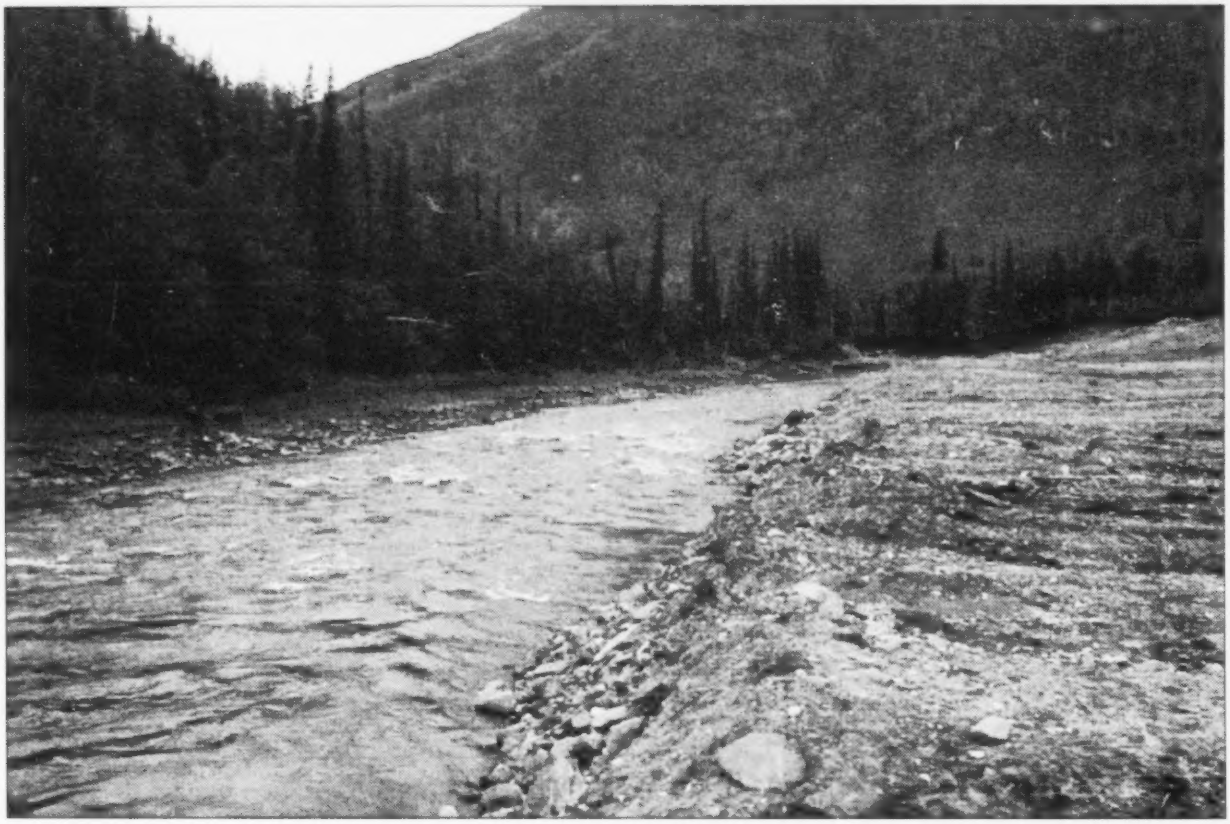
presented to

DAVID McBURNEY
T.D. Oilfield Services Ltd.

DAVID MCBURNEY is recognized and congratulated by industry and government for outstanding placer mining reclamation practices on the banks of the Indian River.

Mr. McBurney has gradually moved his operation on one bank of the Indian River upstream, working in an organized and systematic fashion. Whenever previous mining disturbances were encountered, Mr. McBurney has reclaimed the old workings along with his own. Mr. McBurney has sacrificed small portions of mineable ground in order to preserve some stands of large trees adjacent to the original river bank.

Reclamation works were on-going and progressive each year and included mining pits being backfilled and levelled, tailing piles being completely flattened, and overburden being spread evenly over the whole area. Additional efforts included re-contouring and re-vegetation in the mined out areas.



David McBurney's restored river bank, with large rock armouring along the bank and overburden spread up to the edge.

Running water: Supplying the Klondike mines, 1903-1906

David Neufeld
Yukon & western Arctic Historian, Parks Canada

Running water, along with gold, are "the two absolute necessities in placer mining,"[1] according to George White-Fraser, a Klondike mining engineer in the drought summer of 1903. In the Klondike, water was almost always in short supply. Drift mining in the early days took advantage of spring thaw and runoff from the winter snow. However, seasonal shortages were made worse as open cut mining, with its full summer season demand for flowing water, replaced the earlier drifting early in the 1900s. And up on the bench and hillside claims, miners were forced to sell off promising claims because there was, "not enough [water] to make a cup of tea."[2]

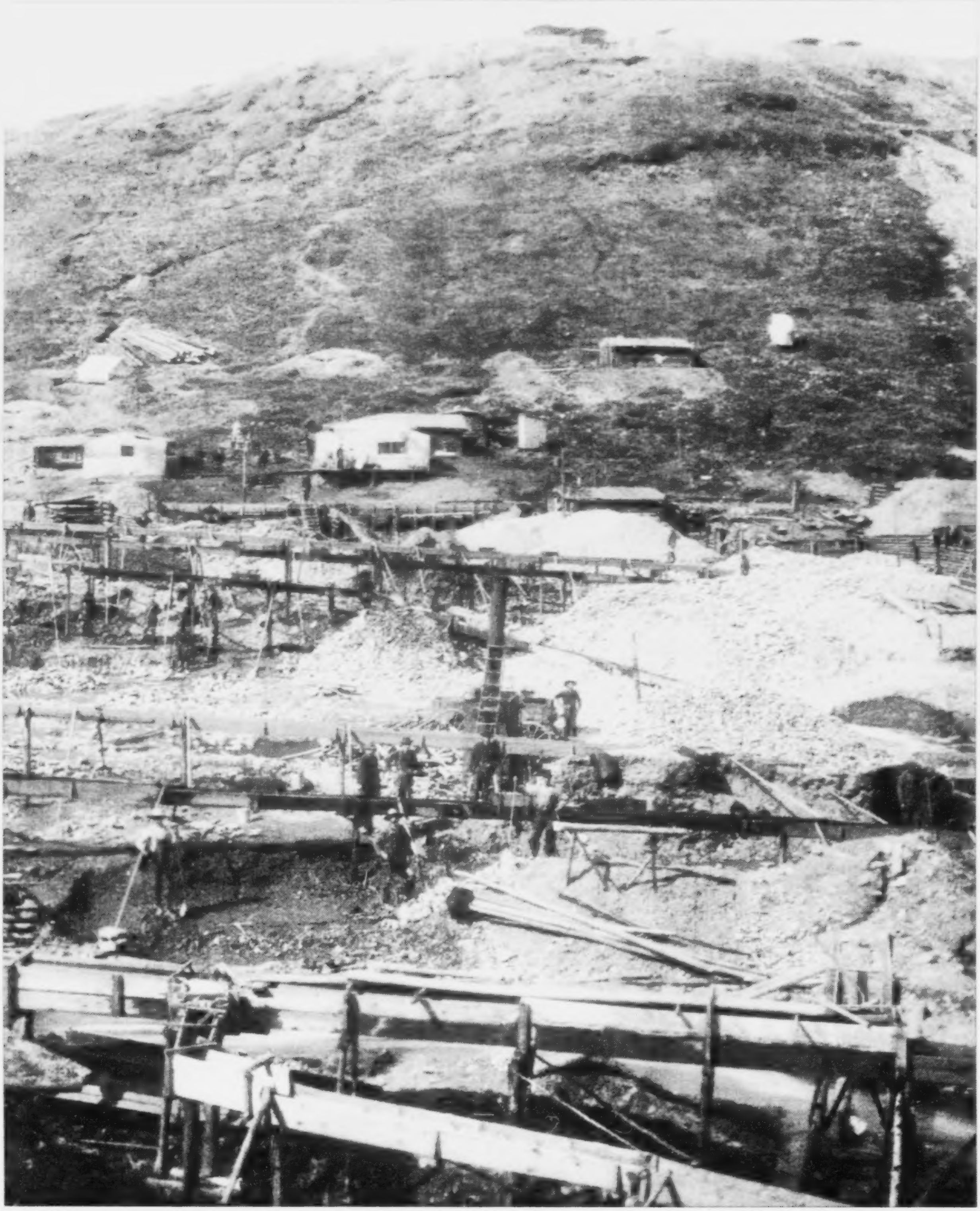
> Running water, along with gold, are the two absolute necessities in placer mining."
>
> George White-Fraser, 1903

Gold mining in the Yukon overcame many physical and technical obstacles in the early years of the Rush. However, as the easily worked gold placer deposits close to the surface were exhausted in the first decade of the twentieth century, the desire to maintain a profitable operation demanded ever more innovation and investment from the individual miner. The limited size of individual claims, the high cost of buying adjoining claims, the expense of specialized mining equipment, the demand for greater amounts, and cheaper sources, of power to run the new machines, and, most important of all, the need for reliable and abundant supplies of water severely tested miners, already under the shadow of corporate buyouts. They worked diligently, sometimes alone, often together, to address their problems, coming up with a range of ingenious, and as time passed, increasingly desperate solutions to save the individual mining system. Ultimately, they were forced to sell out to the corporate dredging giants. Many simply abandoned their claims.

The natural supply of spring runoff and summer rain in the Klondike valleys was limited. An average summer in Dawson has only 140 mm of rainfall. A dry summer meant disaster for the miner. In 1903, with just half the normal preciptation, miners up Quartz Creek were soon in trouble. After working for months taking out pay dirt and building up large dumps, they waited for rain. None came and, unable to clean up and pay their bills, they began to abandon the hills.[3]

Rocking on a relaxed afternoon at No. 6 Eldorado in 1904. (PC, A Johns YT-171)

In areas of concentrated mining activity like the Klondike, the legal right to use water became as important as the claim itself. Water rights were granted upon application and review by the Gold Commissioner. However, demand for these rights far outstripped the limited natural supply. The Gold Commissioner's office in Dawson was overwhelmed by a flood of water applications when Australia Creek was opened in 1904. By fall, the office reported that applications were for

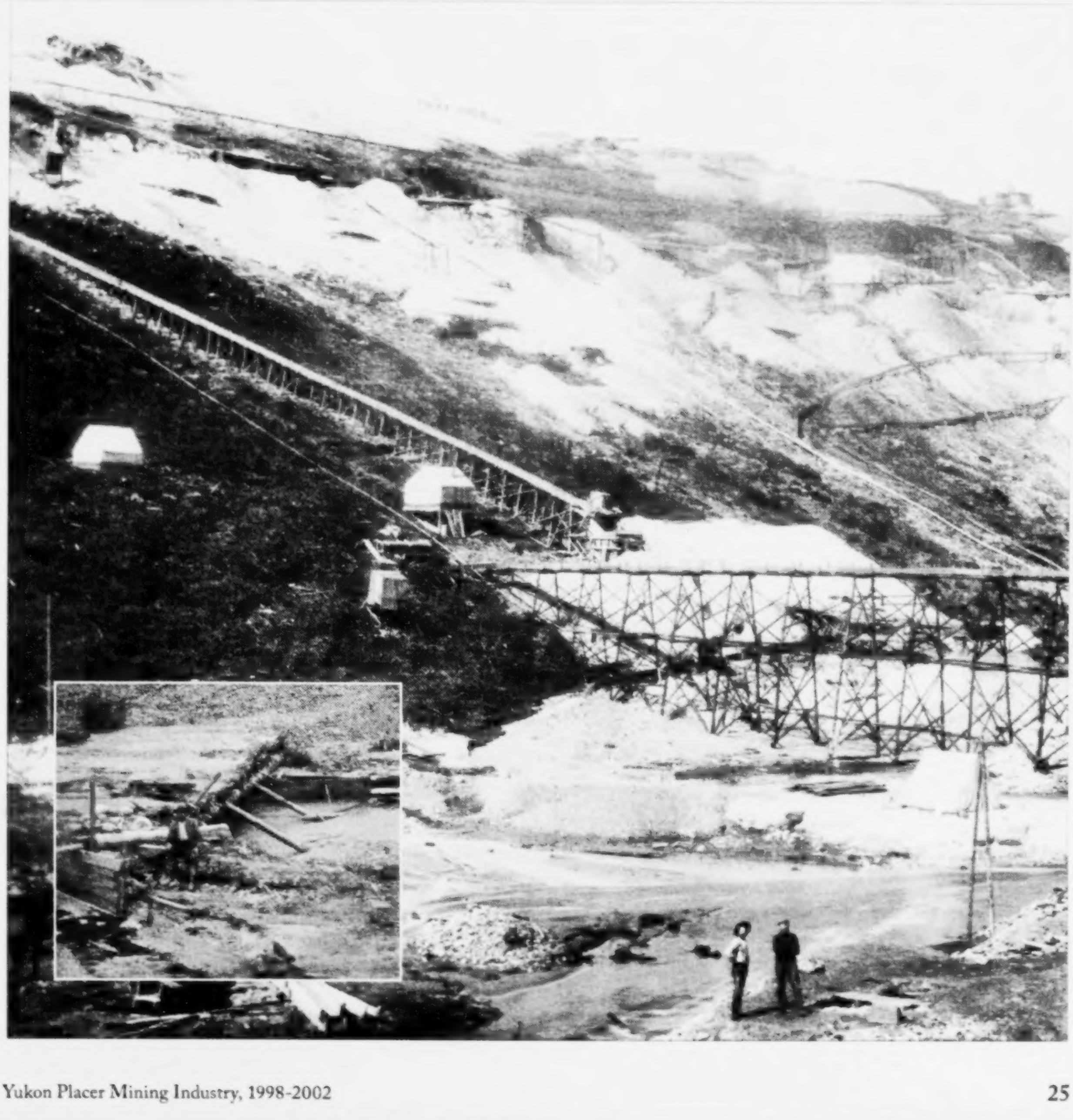


Clean-up piles built up underneath flumes. (PC, A Johns YT-202) three times the peak flow of the creek.[4] With such a demand for a limited resource it is not surprising that disagreements appeared and quickly grew to large proportions. In August, 1904, Gold Commissioner Senkler noted 84 cases before his court, the majority "water disputes."[5] In the following year he again reported;

> *A large proportion of the litigation is due to the scarcity of water. As time goes on the necessity for water to work the lower grade properties at a profit increases. The supply is far less than the demand, and the result is many disputes arise as to the right of priority to what water there is in the creeks and streams in the vicinity of the gold-bearing ground. The production in future…will depend largely on the supply of water... In order to work at a profit water must be brought by gravity from the most available sources. The expense that will be incurred in carrying out water-schemes properly will be very great, and it is, in my opinion, the chief problem confronting the Territory at the present time.*[6]

A tramway for paydirt down to the creek on Cheechaco Hill.
(PC, A Johns YT-230)

Inset: J.P. Anderson at his empty reservoir, 42 b/d (below discovery) Bonanza Creek, 1903.
(PC, A Johns YT-201)

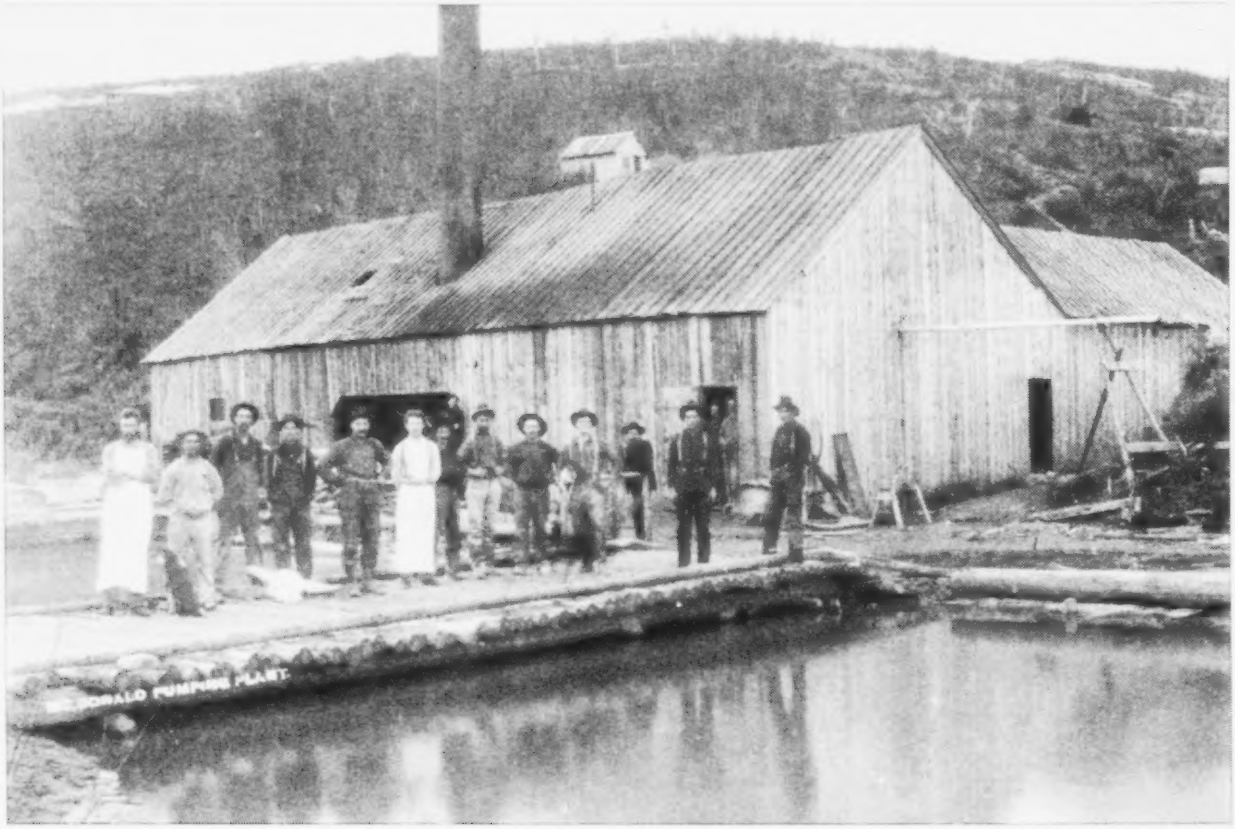


Individual miners, not blessed with the necessary capital resources to undertake proper "water-schemes," faced two choices. They either brought or kept water on their claims or, less favoured, moved their gravel to a supply of water.

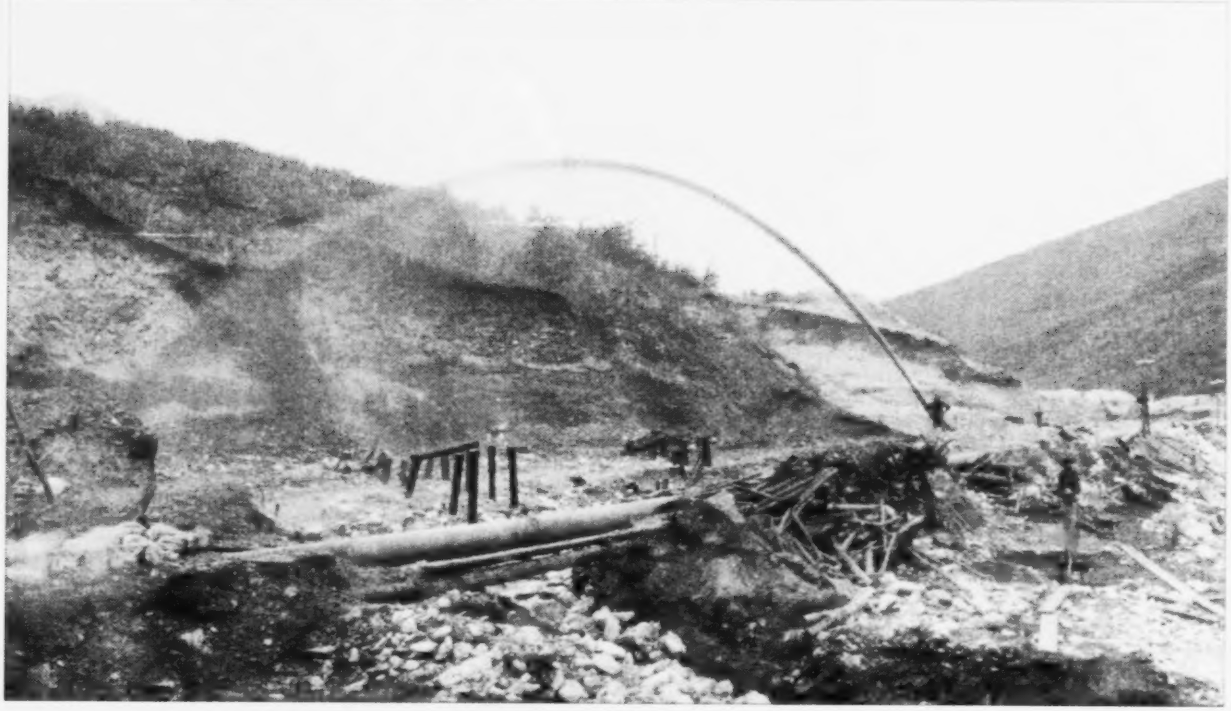
On hillside claims, complex networks of potholes and wing dams saved as much of the spring thaw and irregular summer rain as possible. This supply was supplemented by water carried up the hills in pails and oil cans.[7] Using rockers, which allowed the miner to reuse water, was slow and back-breaking work, but it required much less water than sluicing. Some miners, with access to the creeks, erected gravity tramways to haul their paydirt down to the valley for washing up.

The obvious need for better distribution of water encouraged the formation of several varieties of water management systems. In the Atlin area, which suffered from the same shortage of water, the Willow Creek Miner's Co-operative Association was formed in the summer of 1899.[8] After having "suffered long and patiently and the water monopolists had had things all their own way...," over 100 miners organized themselves to develop a two-mile long ditch from Pine Creek to their claims along Willow Creek. Shares in the co-operative were sold to finance the ditch and assist miners in need. Miners volunteered their own labour to dig the ditch. In late August, 1899, the ditch was completed and water began to flow to the claims.[9]

Commercial water pumping firms were more common in the Klondike. As early as 1899, Falcon Joslin and his brother built a small ditch along Dominion Creek. Roughly three miles long, the ditch supplied the Joslin brothers with water for their own claims and for sale to neighbouring miners. They operated the ditch briefly and then sold out to a larger operator, Joslin moving from mining to real estate and mining agent.[10] While water supply companies soon ran into financial and technical problems as the scale of operations increased, larger mining firms working hydraulic plants continued to supply



McDonald's pumping plant. (PC, A Johns YT-150)

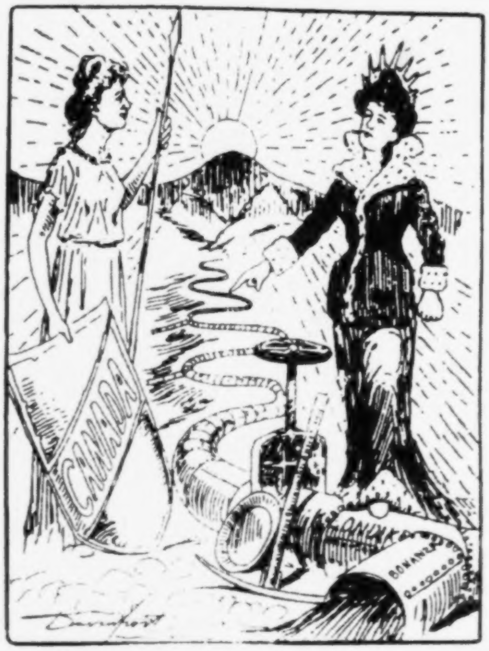


Hydraulic mining operations of the Pacfiic Coast Mining Co. on Cheechaco Hill.
(PC, A Johns YT-223)

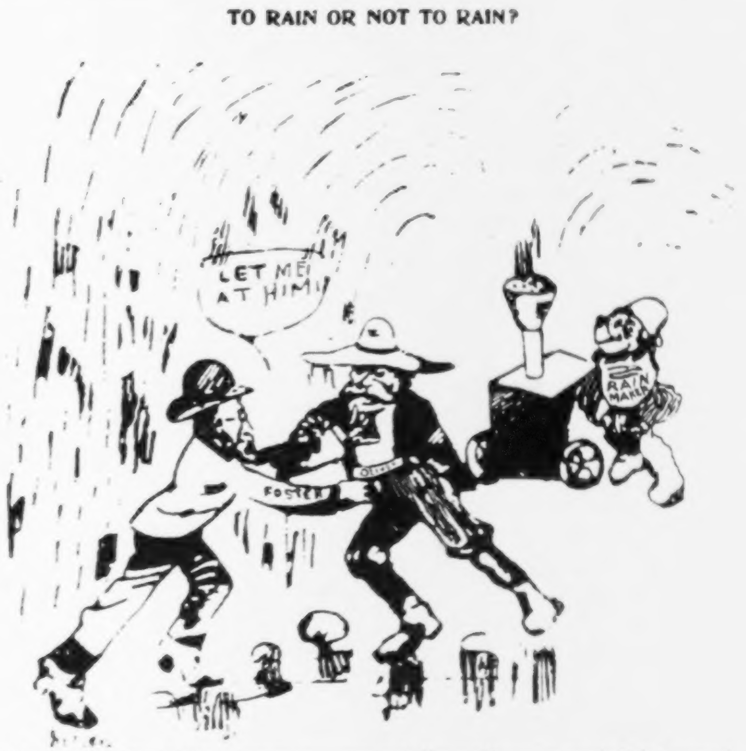
individual miners with water surplus to their own needs. In dry years, and as hydraulic operators expanded their operations, this surplus disappeared and neighbouring miners were once again out of water. In 1904, a year with average summer rainfall, miners on Cheechako Hill were able to purchase water from the Pacific Coast Mining Co. Their large pumping plant on Bonanza Creek brought up "2 sluiceheads of muddy, used water" to a reservoir where it could be recirculated. The Electric Light Co. of Dawson balanced its utility load by pumping water from Bonanza Creek to a reservoir 350 feet above the creek. From here water was sold for $7.50 per hour for each sluicehead.[11]

The regional water shortfall prompted the Klondike mining industry to promote several ideas to increase the local natural supply of water. One of the first of these projects was undertaken by Joseph and Ellen Acklin.[12] The Acklins had established a farm on the sunny north side of the Klondike River about three kilometres above Dawson. While raising vegetables and hay were profitable, the farming business was quickly abandoned when gold was discovered on the property. After hydraulicing began in the dry summer of 1903, the Acklins found their mining operations limited by the availability of water. They applied for water rights from Moosehide Creek and the Twelve Mile River. Surveys for two ditches were completed the following year and construction of the ditches began. However, the perennial problem of poor capitalization brought the project to a halt uncompleted in 1905.

Miners' difficulties and the failure of these small-scale projects led to a growing demand for government involvement in the water supply



Editorial cartoon in the Klondike Nugget of February 3, 1903 supporting the active campaign of miners for a central govenment water supply system for the Klondike.



Mr. Foster and Mr. Oliver had three separate encounters in the House of Commons over the Yukon proposal to hire a rainmaker. In the meantime Yukon — and presumably Hatfield also — went on quietly with the preparation. The rain — if rain there come — will fall as of old on the just and the unjust alike, so that were Mr. Foster in Yukon, instead of criticizing its people at a range of five thousand miles, he would get as thorough a soaking as the ninety and nine just persons who need no rain — nor repentance.

Hatfield's arrival in Dawson prompted a vigourous debate in the House of Commons over the use of government funds to hire a rainmaker.
(Yukon World, June 5, 1906)

business.[13] During the hearings of the Britton Commission, looking into the Treadgold Concession, several miners called upon the government to undertake the construction and operation of a centralized water supply and distribution system. The example of Calgoorlie, where the Australian government built a 350-mile long pipeline into the desert to carry water to a mining field, was raised several times.

The Canadian government responded to the water difficulties of the Klondike and the demands of the miners by preparing a survey of a possible water system. In the spring of 1903, W. Thibaudeau, a civil engineer with the Department of the Interior, was instructed to prepare a preliminary plan for a massive water system. He surveyed the upper Klondike watershed through March and April preparing topographical maps and identifying several possible ditch routes. Two years later he was ordered to prepare a detailed water proposal.

Thibaudeau worked on the government proposal through the summer and fall of 1905, reviewing his earlier work, considering competing commercial proposals, and studying the ground once more. His report on "the project to supply the Klondike Mining District with a complete water system for hydaulicing and sluicing purposes" was completed in February, 1906.[14] The proposed water system, estimated to cost over $6 million to construct and nearly $600,000 annually to operate, included over 350 kilometres of canal, 29 kilometres of metal syphon, and five kilometres of tunnel. It was to draw water from far up the main branch of the Klondike River and distribute it to miners on Bonanza and Hunker creeks as well as the north side of the Indian River basin. The high cost of the system and the rapidly changing needs of the Klondike mining industry, however, eroded the government's, probably always limited, interest in the project and it was quietly shelved.

Unable to raise either commercial or government capital for the development of a regional water system, the Klondike-based mining operations lost control of their future. Future capital flows, directed to different types of projects, would force major changes in the system of Klondike mining. The miners, however, did not give up so easily and as economic pressures on their operations increased so did their desperation.

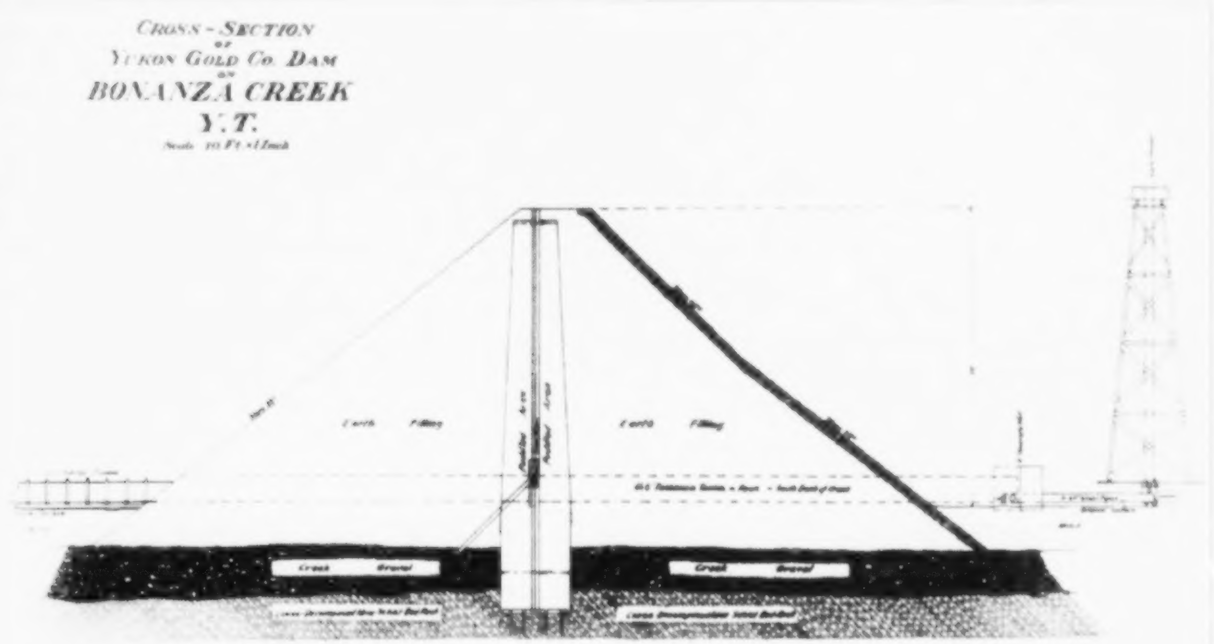
The creeks supplying the water for Klondike mining were precipitation fed. Since it was becoming clear that it would be difficult, and expensive, to supplement the local water supply from external sources, some mining companies argued for increasing the natural local supply. Nine of the larger companies, mostly hydraulic operations, approached the Territorial Council in the summer of 1905 with a proposal to hire a professional rainmaker. The Council accepted the idea. A $10,000 contract with Charles M. Hatfield, a California "precipitationist," was signed, "to increase the rainfall...

sufficient to insure, as far as ample rainfall will, a successful and prosperous summer for the placer mining industry of the Dawson District."[15]

Hatfield and his assistant arrived in Dawson during an early summer hot spell in 1906. By the 11th of June he had set up his equipment; a tall tower, containers with a variety of his rainmaking chemicals, and devices for sending them into the atmosphere, on the top of King Solomon's Dome. Hatfield immediately began his demonstration and "threatening clouds" soon gathered around the Dome. Despite the fulminations and stink produced by the apparatus, only two small showers of six millimetres on the 15th and 17th followed, and the newspaper noted "the sluiceboxes [remained] as dry as a wagon tongue." One of Hatfield's neighbours, J.W. Berg on Quartz Creek, noted dryly that he and his wife, "had come to town to take a bath."[16]

Chief Isaac, the chief of the Hän people at Moosehide, took advantage of the local consternation and claimed Hatfield's failure was due to the power of the First Nation's four Medicine Men. The chief, long familiar with local weather patterns, stated that he would stop the rain until Hatfield was dismissed. He further promised that his Medicine Men would produce "oceans of rain" for just $5000. The Territorial Council, already sold on Hatfield's "scientific method," dismissed Chief Isaac's offer as superstituous nonsense. Hatfield's subsequent failure was attributed to the still imperfect understanding of the principles of scientific rainmaking. Hatfield himself grasped the crux of the problem in his farewell to Dawson, "It is a well known fact that the hydraulic miner requires a great deal of water, which they did not receive." Other ways of addressing the water shortage were necessary.[17]

The failure of the individual mining system to address the water supply problem was only the most obvious of a host of technical and economic shortcomings in the efficient mining of the more deeply buried Klondike placer deposits. The result was a continuing drop in the production of gold. Relying on luck to strike gold, unable to effectively mine their small holdings, subject to rapidly escalating costs for power and water, the individual miners of the Klondike felt besieged in the land they felt they had made for themselves. It would be the highly centralized and outside-controlled corporations that



Yukon Gold drawing of dam at 57 a/d (above discovery), Upper Bonanza Creek. Construction took place between August 1906 and July 1908. (PC dwg. 3.A20.74) would invest the capital and solve the technical problems of the goldfields. However, the individualistic mining system that founded a newcomer society in the Yukon would be pushed to the margins.

Notes

[1] National Archives of Canada. Transcripts of Public Hearings, Britton Commission Inquiry Into the Treadgold and Other Concessions in the Yukon Territory, p. 52. (Here after referred to as Britton Commission).

[2] Britton Commission, p. 211.

[3] Britton Commission, pp. 56 and 175.

[4] Canadian Mining Review, Dec., 1904, p. 257.

[5] Annual Report of the Dept. of Interior, 1903-04, Yukon Territory, p. 6-7.

[6] From H.A. Innis, Settlement and the Mining Frontier (Toronto, 1936) p. 223.

[7] Britton Commission, p. 300.

[8] Reports of the Willow Creek Miner's Co-operative Association by Alfred Carmicheal were published in the Atlin Claim, Aug. 19 and 26, 1899.

[9] Co-operative actions were also promoted in the Klondike. An example is noted in Britton Commission, p. 238.

[10] Britton Commission, p. 579.

[11] Annual Report of the Surveyor-General, 1906, p. 157 and Britton Commission, p. 410.

[12] From L. Green, The Gold Hustlers (Anchorage, 1977) pp. 90-96.

[13] Britton Commission, pp. 233, 250, 290-291, 298-299. Information on the Australian example was also reported in the Dawson Daily News of July 28, 1910 and the Canadian Mining Review, Nov., 1904.

[14] Surveyor-General, 1906, p. 127.

[15] Hatfield's contract noted in Parliament of Canada Sessional Paper No. 174, 1906.

[16] Yukon World, June 6, 7, 10, 12, 13, 16 and July 7, 1906.

[17] Yukon World, June, 14, 1906 for Chief Isaac's proposal and June 17 and 27, 1906. Weather information courtesy of Don Watt, A.E.S. Weather Station, Whitehorse and Daily Climatological Data 2.0, Climate Services Division (A.E.S. Sept., 1989).

A comparison of drilling techniques for deposits containing free gold using radiotracers: A summary of results

Randy R. Clarkson, P. Eng.

In recent years, there has been a dramatic increase in the development of gold deposits located in semi-consolidated and unconsolidated materials such as placer gravels, oxidized rock and soils, which may contain particles of free gold. It is often difficult to recover representative samples due to the high density and malleability of the native gold particles.

In many cases alternative drilling techniques such as reverse circulation, normal circulation and auger drills have been used to obtain representative samples for the exploration and evaluation of these deposits. In the absence of accurate impartial comparative information, drillers and their equipment have often been selected for their penetration rate or cost-per-foot rather than for sampling accuracy. The resulting sample assays can be significantly different to those obtained by diamond drilling or by other bulk sampling methods. Some of these differences can be attributed to the potentially erratic distribution of free gold in both lode and alluvial deposits. However, some errors may be due to the incorrect selection, design and/or operation of the drilling equipment.

Radiotracer drill testing methodology

In the summers of 1992 and 1994, the author designed and carried out a statistically valid research program using mildly radioactivated gold particles as tracers radiotracers. Walsh (1986) was the first to research and develop the use of radioactive gold (Au^{198}) to test gold recovery equipment. Clarkson (1994-1996) further developed field testing procedures using radioactivated gold as tracers to provide a statistically valid, rapid, simple, cost-effective and safe method of evaluating the gold recovery efficiency of virtually any device which recovers gold, including sluiceboxes, jigs and drills.

Radioactive gold has a very short half-life of 2.7 days and rapidly disintegrates to normal background levels of radiation within a few weeks, thus eliminating the long-term storage problems normally associated with other radioactive materials. Radiotracer testing technology avoids both the high costs and the unpredictable error levels common when conventional testing procedures are applied to ores containing free gold particles.

Two types of fully cased normal circulation (N/C) drills, two types of reverse circulation (R/C) drills and three solid auger drills were evaluated under a variety of field conditions. A frozen cylindrical core of compacted gravels containing four sizes (1.2, 0.60, 0.30 and 0.15 mm), (+14, +28, +48 and +100 mesh) of radiotracers was placed at various depths in 44 drill holes and the holes were re-drilled. Scintillometers were used to track free gold losses due to spillage and blow-by around the collar (top) of the hole. Some gold particles were located in temporary traps in the drilling equipment and these particles would have contaminated subsequent samples (as carry-over).

Results

Several myths commonly attributed to particular drilling methods were dispelled. There was no significant difference between the recoveries of the four sizes of gold particles with any of the drills tested. Observations and down-hole scintillometer records indicated that the free gold particles did not follow the bit down the hole and were either carried out of the hole or forced onto the sides of the hole at or above the depth at which the radioactive gold was positioned. A brief summary of the results of these tests is included in the table below.

Normal circulation drills

The normal circulation, fully cased drills provided the highest and most consistent gold recoveries, even under adverse drilling conditions. The two drills tested used an outside casing with a drive shoe on the bottom and a separate inner string of drill rods with a drill bit. The Schram drill used a tricone bit on its drill rods and drove its drill casing down with a pneumatic hammer. The Barber Dual Rotary drill used a down-the-hole hammer drill bit for drilling harder rock and pushed its drill casing down with its separate hydraulic table. The drill cuttings sample was swept from the bit face through an annular space between the drill rods and casing to the surface. On surface, a rotating swivel head maintained a seal between the casing and drill rods and directed the cuttings through a hose and its many fittings to a sampling cyclone.

Three deep holes (average tracer depth of 24 m) and six shallower holes (11 m) were tested in the Atlin and Fort Steele Mining Districts of British Columbia. Net radiotracer gold recoveries (not including spillage, blow-by and carry-over losses) for both drills tested were relatively high (averages of 75-78%) and consistent (range of recovery = 20-21%). Sample spillage losses at Atlin were increased when ultra high

A comparison of drill performance. D-T-H = down the hole.

Parameters	CASED-NORMAL		REVERSE-CIRCULATION		AUGER
	Rotary Tricone	Dual D-T-H	Rotary Tricone	Single D-T-H	Average
Drill bit diameter (mm)	152	127	115	110	185
Drill rod or auger diameter (mm)	114	114	89	95	154
Casing outside diameter (mm)	184	184	N/A	N/A	N/A
Tracer core position (depth) (m)	24	11	17	13	6
Number of holes traced	3	6	4	6	20
Drilling rate per shift (m)	31	33	50	47	21
Drilling rate per person (m)	16	16	25	24	21
Penetration m/h					
Organic soils	11	16	23	19	16
Gravels	6	8	15	N/A	12
Frozen gravel	N/A	N/A	N/A	18	7
Boulders	1	2	1	12	1
Bedrock	2	6	3	14	2
Highest gold recovery (%)	84	87	82	88	86
Lowest gold recovery (%)	64	66	0	0	45
Range of gold recovery (%)	20	21	82	88	41
Gold spillage losses (%)	18	11	4	16	0
Carry-over losses/contamination (%)	2	5	2	14	0
Blow-by losses around collar (%)	3	0.4	18	1	1
Losses remaining in drill hole (%)	3	5	51	31	32

viscosity drill cuttings slurries kept radioactive gold particles and other density minerals in suspension. Sample spillage and sample volumes were increased at Fort Steele when high-pressure ground water was encountered in gravel seams. Fully cased normal-circulation drills should be used for unconsolidated soils and for deep, wet, or bouldery gravels. The casing shoe should be drilled or driven at least 300 mm ahead of the drill bit when unconsolidated materials are being sampled. This separation may have to be increased if high-pressure ground water is encountered. The drill bit may have to be pushed below the casing shoe for short intervals if hard boulders are encountered.

Reverse circulation drills

The reverse circulation drills had the highest drilling rates but their extremely inconsistent gold recoveries preclude their use for the evaluation of free gold grades. Dual tube reverse circulation drilling (also known as R/C or center sample recovery) uses a double-walled drill pipe and compressed air and/or water to flush drill cuttings away from the bit face and to carry the cuttings to surface.

Two types of reverse circulation drills were tested: a rotary tricone with no casing seal at the collar, and a down-the-hole hammer with an air crossover system. The net radiotracer recoveries (not including spillage, blow-by and carry-over losses) for the two R/C drills were very low (averages of 25 and 38%). In addition, their extreme range of net recoveries (from 0 to 88%) would make it very difficult to determine the grade of the drill sample containing free gold with any precision.

Water injection (required to prevent plugging) dramatically increased segregation, entrapment (carry-over) and spillage losses and made it very difficult to collect and contain the samples. The erosive action of the high-pressure air and water, which was used to flush the cuttings, increased the tendency for caving in the holes. This erosion also created a rough surface along the walls of the hole which helped trap an average of 31 to 51% of the radiotracers in the drill holes. When an external casing was not installed to seal the collar of the hole, blow-by sample losses were excessive (an average of 18%, almost equal to the recovery of the sampling system).

Even though surges of high-pressure air and water were used to flush the long length of the sample recovery systems, many tracers remained trapped in the rotary head, hose, hose fittings and sampling cyclones. To remove these tracers, the cyclone and hose fittings had to be taken apart and cleaned. This contamination and carry-over of values would have created errors in estimated gold grades.

Solid auger drills

The three solid auger drills tested provided reasonably consistent gold recoveries and reasonable drilling rates for shallow (up to 50 m depth) holes in semi-consolidated or frozen soils and gravels, but were not suitable for drilling hard boulders or deep into hard bedrock. The average net recoveries of 64%, 81% and 62% (not including spillage or carry-over) of the three drills were very close to their expected recoveries. The auger drills had higher and more consistent recoveries than the two types of Rdrills (rotary drills) which were tested and would be more suitable for determining the grade of a deposit in semi-consolidated or frozen materials.

Auger drill holes should be at least 150 mm in diameter to reduce errors caused by the nugget effect. The auger samples should be collected in a large flat pan surrounding the collar of the hole. The samples should be shoveled into pails and marked in order of depth. Holes should be drilled their full depth (to bedrock) without pulling and cleaning the rods. The approximate depth of gold values recovered may be inferred by processing the pails sequentially. Auger drill grade and volume calculations are based on the volume displaced by the auger flights and not on the volume displaced by its larger diameter bit.

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Key words

radioactive, radiotracers, free gold, drills, reverse circulation, auger, evaluation

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About the author*: Randy Clarkson is a professional mining engineer registered in British Columbia (since 1983) and the Yukon Territory (since 1982). He has both a bachelor of applied science in mining engineering from the University of British Columbia (1979) and a diploma of mining technology from the B.C. Institute of Technology (1974). Mr. Clarkson has twenty-five years of diversified worldwide experience in alluvial mining, engineering, research and small hydro development. He is also a project manager, researcher, designer, mine surveyor, draftsman and planner. Mr. Clarkson is the president of NEW ERA Engineering Corporation (since 1985). He is also the designer, co-owner/operator of NEW ERA Hydro Corporation's 300 kW Fraser Micro hydro station.*

James (Jimmy) Lynch: Goldminer and gunner, 1913 to 2002

by Mike McDougall

Jimmy Lynch.

Jim Lynch was born in Birkenhead, Liverpool, England to an Irish family. Jim was the first-born child arriving on the first day of August, 1913. Later, two brothers and two sisters joined him and by the time Jim was an early teen, his father's job as a tram conductor just barely kept the family fed.

England was in the depths of a bitter economic depression and job prospects were poor when Jim was growing up. In 1929, he decided to sign up for a government program to have his passage paid to Canada. In return, he committed to work a minimum of three years. The job was menial, a farmhand at a southern Ontario dairy farm, and the accommodations were spartan. Jim's loft was over the cow barn, but the food was good and he grew to like the work and became quite good at it. When he had finished his time at the farm, he took some of his pay in the form of a bicycle and started to pedal to the west. Imagine his surprise at the distance and the climate of northern Ontario in the late fall! Jim quickly exchanged his bicycle for a train ticket in Sudbury.

Jim arrived in Vancouver in the mid-1930s. In a practice now largely forgotten, he had been given a letter of introduction by his family to relatives, Jim's cousin May and her husband Don Morrison. Don had a roofing company in Vancouver and Jim spent a few years as a steeplejack on the skyline of Vancouver. Jim recalled a time they put a new roof on Christ Church Cathedral and just how almost perpendicular those steeples were. Raised as a staunch Catholic, I'm sure Jim wondered at the probity of his work on the centre of the Anglican Church diocese.

In the spring of 1937, Jim and a friend booked tickets on the coastal steamer to Skagway, Alaska and the Whitepass railroad to Whitehorse in the Yukon. At 24 years of age, he was fascinated with the north and had heard that the Yukon Consolidated Gold Corporation (YCGC) was hiring in Dawson City. The two arrived at Whitehorse in March of 1937, too late for the winter sleigh ride to Dawson City and too early for river navigation. With his last $75, Jim purchased a ticket to Dawson City on the Whitepass Airlines, a Ford Tri-Motor. Arriving in Dawson, they discovered that the YCGC was not hiring yet, so with a local map and a supply of grub they decided to see what was at the town of Sixtymile. While maps of the time, and even today, show a town at Sixtymile, it has always been just a collection of gold mining camps with no facilities for travellers. The journey took three days on foot along what is now known as the Top of the World Highway, which was then called the Sixtymile road. Jim and his friend ploughed through waist-deep snowdrifts, sometimes rolling over them when they couldn't push through them. They stayed in road houses which were still standing from the initial gold rush years and even took a picture of each other at a road house just as the tourists do today.

Jim and his friend arrived at the mining camp of Ray and Gordon Stewart of McCormick and Stewart Mining Company on Miller creek. Ray, amazed at seeing them, asked them how they had got out there. When they relayed their adventures, Ray's first question was "Do you want a job?" As these fellows were the first ones to travel on the Sixtymile road since late the previous fall, Ray figured they had what it took to be successful placer camp hands. Jim's first job for the McCormick and Stewart

Bucket of Slaves" - Miners in the bucket were lowered into shaft to fill bucket with pay gravels to send to surface. McCormack and Stewart operation, Miller Creek, 1938. From left front, Gus Vinblad, unknown. In the bucket, Jim Lynch, unknown, Johnny Titus.

Mining Company was cutting wood on the hillsides above Glacier and Big Gold creeks, the exact place he would have his camp some 60 years later!

Wood was an important commodity for the placer mines of 1937. Wood fed the steam boilers used to thaw gravel faces, run the winches to lower the miners into the shaft and to lift the pay gravels up out of the shaft.

Most importantly, it fed the cookhouse stove to satisfy the appetites of men made hungry by hard work and inclement weather. Wood was used to shore up shafts so that the sides would not slough in as the buckets of gravel were hauled to the surface. While the tight gravels of the Miller Creek high channel didn't require any sets or props in the drifts, they did require a most important piece of wood - a willow sapling. This was placed at the base of the shaft at the start of each shift between the roof and the bedrock and as long as the stick would slide in and out of place easily, all was well. If it began to bow or stick, then the tracks were pulled out and the drift was abandoned. A tight stick meant that the roof was beginning to sag and was probably ready to collapse.

In the summers of 1937, 1938 and 1939, Jim worked an eight-hour shift at the mine on Miller Creek and in his off hours he explored the countryside around the surrounding creeks and valleys of the Sixtymile. In the winters, he built a cabin and provisioned himself with moose and caribou and with a partner, cut wood for the mine on Miller creek. One winter, Jim contracted with the Holbrook Dredge crew to haul his winter supplies into the Fiftymile River with their Caterpillar 22. While he was there, he spent that winter trapping the valleys of Fiftymile River, Boucher Creek and the Sixtymile River.

In the fall of 1939, with war clouds gathering in Europe, Jim headed outside and enlisted in the Canadian army in New Brunswick. He travelled overseas to the south of England for further training on artillery. Jim was a sergeant with a Canadian Artillery unit in charge of a 25-pound gun; they were first deployed operationally at the landing in Sicily in 1943 and worked their way up the length of Italy. Rotated out of active duty for a short time, he came back to Canada on a war bond tour. He spoke to large groups of people about his wartime experience to encourage people to purchase war bonds to help fund Canada's war effort abroad. Upon his return to active duty just after the Normandy invasions in 1944, Jim was given command of a tank (mobile gun) in a mobile artillery unit. I well remember his smile when he described the life of a mobile gunner and the hint of pride that it was one of the last machines still operational when they entered Germany almost a year later. At the end of the war Jim stayed on with the occupying forces for a year in Germany, and then returned to Canada. Altogether, he had served in the United Kingdom, the Mediterranean and in Europe. He was awarded the Canadian Volunteer Service Medal and Clasp, the Defence Medal, Italy Star, the 1939-1945 Star and the France and Germany Star.

Like many of his generation, Jim Lynch gave his best years in the service of his country in the 1939 to 1945 world war. Partly as a result of the long hours and days without sleep and the constant stress during the war years, including having been knocked unconscious by close shell bursts a number of times, Jim suffered from seizures for a number of years. In the immediate post war years, Jim would often, as he put it, "just flop out for hours at a time." Later these seizures were controlled by medication. After a period of convalescence at the Veterans Hospital in Vancouver, Jim returned to his beloved Yukon in late 1948 at the age of 35. Although the veterans department suggested he take a job as a park warden at one of the new parks in the territory, Jim declined and headed back to the Sixtymile country. Jim bought out an oldtimer and set up a hand-mining operation next to Jim Bungate's place on upper Glacier Creek. Jim Bungate was one of the original oldtimers who had walked into the country in the gold rush days and had been hand mining on Glacier Creek ever since.

The face of placer mining had changed during the war years and many of the oldtimers had sold out or passed away. The new miners were now using mobile

Jim Lynch with winter provisions in November 1938. Sixtymile River valley below the mouth of Big Gold Creek.

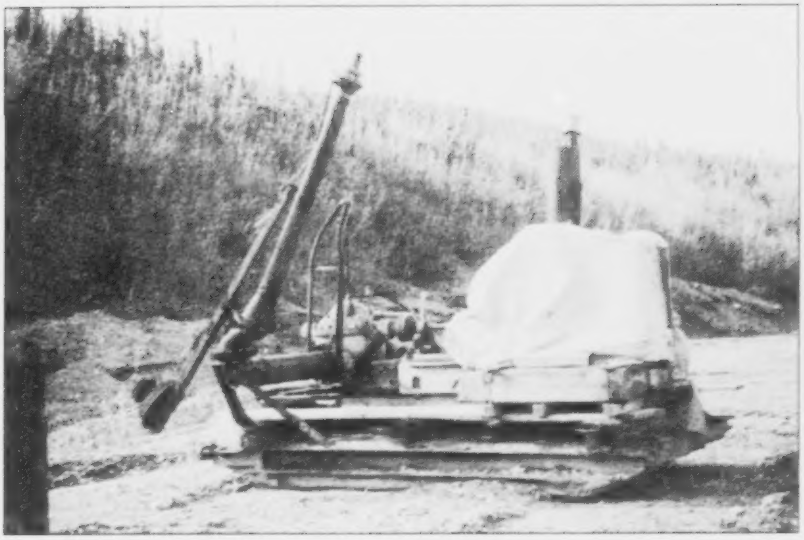
mechanized equipment for the first time in the production of the gold. There were many war surplus Caterpillar Tractors equipped with bulldozer blades, available for a reasonable price, which meant smaller operators were able to mine deposits that were inaccessible to the large dredges or of an insufficient grade to make it worthwhile. The popular term for these owner/operators was "Cat miners." In 1948, an Alaskan bulldozer mining company called Yukon Explorations acquired rights to an inactive dredge and the dredge ground on Glacier Creek and Big Gold Creek. Harold Schmidt and Glen Franklin managed the company and introduced a new way of mining to the valley. Harold Schmidt had met Jim on his claim on Glacier Creek and knowing he had experience with diesel engines during the war, asked Jim to come and work for them. Jim preferred to work alone, so with one helper, he ran the stripping program in front of the dredge for Glen Franklin. The stripping program was a solitary occupation which suited Jim just fine. When not stripping with the hydraulic monitor unit or running down the drains or frozen humps on an old D-7 Caterpillar bulldozer, Jim "made myself generally useful around the dredge camp." Jim called the "catskinners" (men hired to drive the bulldozers) in the camp the "Alcan Commandos," in reference to the many locals who had learned their trade during the construction of the Alaska Highway.

In the middle 1950s, Jim tired of the stress of camp life and the monotony of the stripping program and decided to walk down the Sixtymile River to Enchantment Creek. Here Jim prospected, trapped, built line cabins and caches and walked over the next 10 years or so. It was normal for him to walk from the creek to the post office at Glacier Creek to see Joe Myers and to get the mail and walk right back again, regardless if it was winter or summer. The round trip distance was approximately 80 miles. His only contact with the outside during the winter months was Pat Callison with his ski-equipped bush plane. Pat would land on a snow strip that Jim had hand-cleared and packed down with his snow shoes.

In the middle 1960s, as the placer mining industry becoming increasingly more mechanized, Jim realized that his hand operation at Enchantment Creek was just too far from the existing road network to be an economic mine. He headed back up to Glacier Creek to prospect and stake leases to cover ground that had been dropped by Yukon Explorations when their mining and dredging of the ground had been completed in 1960. Jim discovered that there was gold left on the margins of the creek, which had been covered by frozen muck during dredging and previous mine operations. Jim renovated an abandoned cabin at the dredge camp which had been built in the early part of the gold rush and was still sound.

In 1967, Jim acquired his first piece of heavy equipment, a 1937 Caterpillar RD-7 bulldozer. The machine had been part of the YCGC fleet and was sold off when the company stopped dredging in 1966. Jim used it to crowd the creek into the bank to facilitate water stripping and to push the pay gravels up to his sluice box. Jim had an interesting relationship with that old "Cat." He would curse its shortcomings, saying that it pushed too fast because the gear ratios were made for farming and for towing and not for pushing a blade; or the transmission was fragile and broke down too often; and that the blade was far too wide for so little horsepower. On the other hand, he would often say in later years as he gazed upon his camp and his claims on Glacier Creek that he "owed it all to that old RD-7."

During the late 1960s and early 1970s, Sixtymile River and Glacier Creek were fairly quiet. Ole and Donna Medby, Lorenzo Grimard and Emile Faucher and a very few others were Jim's only neighbours. Jim mined mostly on his own with his cousin, May Morrison, visiting in the summers to help out with the mining and the cooking. As the price of gold increased in the 1970s, Jim hired a helper to assist with the sluicing and the stripping, but continued mining "his way," using the creek and a pump unit and monitor he had purchased from Glen Franklin to help strip and "shrink down" the overburden before sluicing the uncovered gravels through a single run sluice box. The



Pump unit and monitor purchased from Glen Franklin

pump unit was a self-contained water pump and hydraulic monitor mounted on a screened base that contained the pump intake.

In use, the pump unit was towed into the creek with a Caterpillar bulldozer. A small dam was pushed up downstream of the set-up and once the water reached a sufficient depth, the engine and pump were started. The flow of water from the monitor washed down the thawed muck. In addition, the same system could be used to wash the fines and clays out of the pay gravels to make it easier to sluice. One can only imagine the din of standing so close to a General Motors 6-71 Diesel engine working hard to project a stream of water at 60 pounds per square inch! One time, Jim told us, the monitor got away from him, swung around and knocked the muffler off the engine. Jim put up with the vagaries of the machine because (as he put it), "it is far cheaper to move mud with water than with a Cat." When the old and much cursed RD-7 would not move the pump unit anymore, Jim parked it and called the local Caterpillar dealer and, sight unseen, ordered a machine to replace it. Finning Equipment, the northern distributor, delivered a used Caterpillar bulldozer, model 3T D-7, which took over as his main bulldozer.

Jim mined through the 1970s with the two machines and his old style single run sluice box. The water was gravity fed to the box through a ditch down the centre of the valley from a large water reservoir constructed upstream. An increase in gold prices and some good cuts in the early 1980s and Jim was able to purchase some modern equipment. A brand new 966 Caterpillar loader and a D7G bulldozer with sealed and lubricated tracks made work much easier during the long days on the creek. Jim then added a second D7G to his fleet for the purpose of stripping thawed ground in late fall.

The area of Glacier Creek he was preparing was riddled with oldtimers' workings, and occasionally, Jim got stuck in one of these placer "rooms" or shafts. His response to this dilemma was to get the second tractor, hook it to the offending bulldozer, and either pull or push it out. It took a little bit of careful management as the stuck tractor had to be left in gear with the engine running to provide a power assist to get it out. Once free of the mud, the driver-less tractor would begin to walk away. Jim would quickly park the tow cat, jump off and run "like hell" to catch the escaping vehicle. Jumping up on it and shutting it down before it got into more trouble was tricky work, especially for a man in his mid-70s!

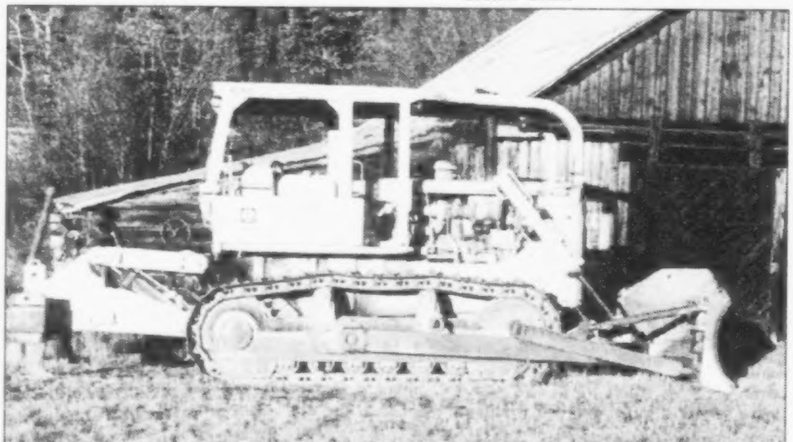
Realizing that he would not be able to mine all of his ground in his lifetime, Jim started leasing part of his ground to other operators in the late 1980s. He continued to mine and prepare his own cuts, but the work was becoming increasingly more difficult. An old knee injury continually flared up, causing him a great deal of pain. Jim added the last piece of equipment to his fleet in the late 1980s, when he purchased a used Komatsu D155 bulldozer with a U-blade and adjustable ripper. He also modified his sluice box to help catch more of the fine gold particles. With the tightening environmental rules around the amount of sediment discharge into the creek, he reasoned that he would have to use a bulldozer to do the bulk of stripping and his D-7 Caterpillars were just too small for the job.

Unfortunately, Jim's health worsened just after he made the purchase of the big tractor and it fell to later operators to fully utilize the promise of the larger equipment. Starting in the late 1980s, Jim spent more and more time at the McDonald Lodge (an extended care facility) in Dawson City, both in summer and in winter. He came out to his camp only after the ferry was in on the Yukon River and returned in the fall, usually mid-October, before the ferry was pulled for the winter. After the war, Jim had decided not to marry and had never possessed a driving licence as he always thought his post-war health problems would cause his early demise. He only started to drive again when he was in his late 60s, but worsening eyesight had forced him to give it up by the time he was 82. To solve the problem of his transportation, Jim would arrange a driver for his truck from Dawson. The driver would have an enjoyable and informative trip en route to Sixtymile and maybe an evening with Jim at his camp at Glacier. One such driver, Chuck McKenzie, turned into a good friend, and the two of them spent two summers touring all over in Jim's truck until Chuck's health prevented further travel. Jim always kept his truck licenced and ready to go until the last year of his life. He never wanted to be a burden to anyone and he valued his independence.

In winter, Jim would travel, using his cousin May Morrison's place in Vancouver as his base. After she passed away in early 1994, he stayed with his old friend Velma Laverty in Edmonton. Jim travelled to visit and always to walk, claiming it was what kept him fit and in shape. In fact, one of his major criticisms of our place in Kamloops was that "it was always too damn icy to walk there." Jim could be seen any time of the year in Dawson walking the Yukon River dike or to the "dairy" (as he called the liquor store) for a bottle of his favourite whiskey, Crown Royal. I am sure that Jim was a bit of a terror in his younger years on his irregular trips to town. Jim and his pal "Shebango" (William "Coach" Krychusky) holed up in a small cabin in Dawson all winter must have been interesting. When he was working on the claim, however, Jim would only have a drink before dinner, not after, maintaining that the meal spoiled the effect of good whiskey!

Those drinking habits changed in later years as working became more difficult for him, to include any time after lunch as a good time for a drink! In an effort to keep you for a visit, his favourite greeting "would you have a drink?" usually garnered success. Many a time I sat on his wood box in my dirty mining coveralls with a glass of water while Jim recounted tales of recent or ancient history. The cabin was always immaculate and as neat as a pin. Jim cooked on his wood stove in all but the hottest of weather and always had a rain barrel full of fresh water at the front door. He was very much the bachelor, with regular routines. First night in camp, he cooked a pork chop or a bit of steak with potatoes and some vegetables for supper and the next morning, bacon and eggs for breakfast. The saved or spilled bacon fat was rubbed into the top of the stove so that it gleamed like new. Stew-making was a favourite dish in his culinary repertoire. A good grade of beef steak replaced the moose of earlier years. The meat was cubed and seared to lock in the flavour. Vegetables and potatoes were added and the whole thing left in the pressure cooker to simmer on the stove till suppertime, good and tender on the same day and great for the next 2 or 3 days. When asked to come

The D7G sitting in front of Jim's shop at Glacier Creek



Jim Lynch at Glacier Creek camp in September of 2000.

to dinner Jim would often decline, saying "Not today thanks, I've got a good stew going!"

Jim was active at his mine until the mid-1990s after which he turned the mining over to the author, Mike McDougall and wife, Kim and family. He concentrated on his garden and the lawn he had cultivated over many years around his camp at Sixtymile. A running battle with the weeds and the willows that kept encroaching on his lawn and surrounding the buildings, kept Jim operating one of his D-7s at the camp to the end so he could "run them down"! His zeal to burn back the dead grass and weeds was nearly his undoing on more than one occasion. When the fire would run up to one of the old buildings, Jim would jump up on his D-7 and plough the fire down to the point where he could beat it back by hand from the buildings. I arrived once to find one of the old buildings completely surrounded and Jim's pants on fire at the cuffs. After a few tense moments, we got him safely doused and the buildings saved. Jim grudgingly allowed that maybe "he just couldn't move as quickly as he used to!." His garden and his lawn were his pride and joy and more than once I have heard him say to a visitor when driving in, "just don't chew up my lawn!" You knew he had the right stuff, not to mention a very green thumb, when he would bring you a bunch of his prize beets, parsnips, carrots or lettuce for your supper.

Jim Lynch's thoughtfulness was remarkable. He always studied things to discover the most efficient way to get them done. I once asked Jim about his experiences with grizzly bears. He said he never carried a gun while travelling in the bush during all those miles on foot in the back country where bears were numerous. The only time a bear caused him more than a moments trouble when it wouldn't get off the trail, Jim just walked around it. Jim said this about his wildlife encounter: "I don't bother the bear and he doesn't bother me." Jim had a respect for the bear and its territory and the bear respected him accordingly.

And in a way that is how Jim lived his whole life!

Jim Lynch passed away August 1, 2002 in Whitehorse, Yukon, just hours into his 89th year.

ABOUT THE AUTHOR: *Mike McDougall came to the Yukon in 1983 from Toronto, Ontario to join his family at their placer operation on Sixtymile River. When Jim Lynch discovered Mike could fix his all-terrain vehicle, a friendship was born. In 1984, Mike met his future wife Kim. Jim kept an "eye" on these "kids" as he called Mike and Kim at their first mine and later as his family grew to include children, monitored his expansions. When Jim could no longer work his mine on Glacier Creek, he asked Kim and Mike to operate it on his behalf. During their 18 years at Sixtymile, Jim and Mike and his family remained staunch friends and kept an "eye" out for him in Jim's later years. They will miss him always, along with many placer miners and Dawsonites alike.*

Mike and his family returned permanently to Kamloops in 2000, due to low gold prices and high operational costs. They now own a business selling Yamaha recreational products, but hope that one day, they will be able to return to the Yukon and to the life of mining that they learned to love.

Dredges in the Yukon

Number	Make	Buckets (feet^3)	Start	Finish	Mined (yard^3)	Where	Remarks
Discovery Dredge	Risdon	3.25	1901	1908	Unknown	42B/D Bonanza Creek-Discovery Bonanza Creek	From Cassiar Bar, shipped to Circle, Alaska (steam)
Can#1-NW#1-YC#1	Marion	7	1905	1938	15,447,289	Bear Creek mouth-21B/D Hunker-17B/LD Dominion Creek	Parts for YC#11
Bonanza Basin Co.	Allis Chalmers	61	1906	1909	Unknown	Klondike mouth	Originally steam powered,fate unknown
YG#1-YC#7	Bucyrus	5	1906	1950	19,435,899	Lower Bonanza Creek-Quartz Creek	Quartz mouth-abandoned
YG#1-YC#9	Bucyrus	5	1906	1966	19,258,037	Lower Bonanza Creek-Bear Creek-Sulphur Creek	Sulphur Creek @ Meadow Gulch-abandoned
YG#2	Bucyrus	5	1907	1918	5,747,219	Lower Bonanza Creek-Bear Creek-Sulphur Creek	Parts to Highet Creek-Dredge- Mayo Mining District
YG#4-NW#2-YC#5	Marion	7	1908	1943	28,937,006	Lower Hunker-41B/D Hunker Creek-249B/LD Dominion Creek	Burned by lightning strike
YG#6-YC#6	Bucyrus	7	1908	1966	41,481,619	90B/D Bonanza Creek-Gold Run Creek-Lower Sulpher Creek	Dominion Creek near Australia pipeline-abandoned
YG#5	Bucyrus	7	1908	1917	6,714,922	Lower Hunker Creek-31B/D Bonanza Creek-7 Eldorado Creek	Parts shipped to Malayia
YG#7	Marion	7	1908	1911	1,546,533	36B/D Hunker Creek	Shipped to Iditarod, Alaska
Can#2-YC#2	Marion	16	1910	1942	48,855,501	Klondike River valley	Near Quigley Gulch-abandoned
YG#8	Bucyrus	7	1911	1917	4,688,302	4A/D Bonanza Creek	Shipped to Malayia (steel hull)
YG#9	Bucyrus	7	1911	1915	2,420,066	7 to 26 Eldorado Creek	Shipped to Idaho (steel hull)
Can#3-YC#3	Marion	16	1913	1952	48,266,723	Lower Klondike River-Lower Bonanza Creek	
Can#4-YC#4	Marion	16	1913	1959	65,559,475	Klondike River-lower Bonanza Creek to 17 A/D Bonanza Creek	Parks Canada exhibit, Bonanza Creek
YC#8	Yuba	7	1938	1966	19,578,477	Middle Sulphur Creek	Abandoned
YC#10	Yuba	7	1939	1964	18,604,366	10B/LD Dominion Creek to 175B/LD	Near Kentucky Creek-abandoned
YC#11	Yuba	7	1939	1966	21,921,063	59B/DHunker Creek-Last Chance Creek	Last Chance Creek-abandoned
YC#12	Marion	2.5	1953	1965	1,881,200	Middle Dominion Creek	Near Hunter Creek bought by Parks Canada (steel hull)
				Total sluiced	**370,343,697 yd^3**		

Abbreviations

Can	Canadian Klondike Mining Company
NW	North West Corp/New North West Corp.
YG	Yukon Gold Company
YC	Yukon Consolidated Gold Corp.
A/D	Above Discovery
B/D	Below Discovery
B/LD	Below Lower Discovery

Rated daily processing capacity

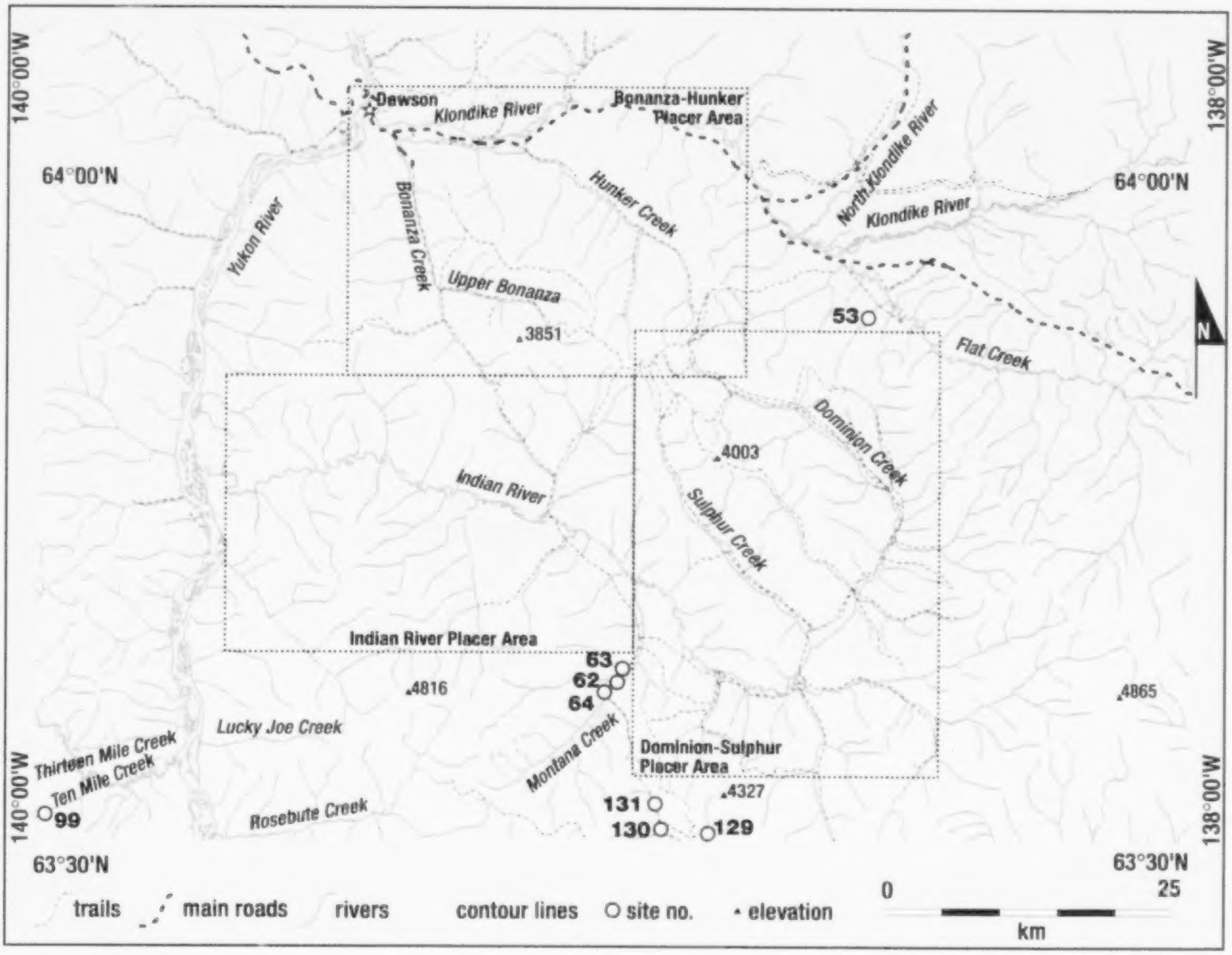
5 cubic feet- 3500 yard^3
7 cubic feet - 5000 yard^3
16 cubic feet - 16,000 yard^3

Note

These dredges worked in the Klondike area only. Other dredges in the Yukon operated on Sixtymile River, Fortymile River, Henderson Creek, Thistle Creek, Clear Creek (2.5 ft^3, built by Walter Johonson Company, 1939), Gladstone Creek, Highet Creek, Stewart River, and the Yukon River (Cassiar bar). The last dredge to operate in the Klondike was No. 11 at the mouth of Last Chance Creek, November, 1966.

KLONDIKE
PLACER AREA

SITES
53, 62-64,
99, 129-131


140°00'W
138°00'W
64°00'N
63°30'N
Dawson
Klondike River
Bonanza-Hunker Placer Area
North Klondike River
Yukon River
Bonanza Creek
Hunker Creek
Upper Bonanza
3851
53
Flat Creek
N
Dominion Creek
4003
Indian River
Sulphur Creek
Indian River Placer Area
63
62
64
4816
4865
Lucky Joe Creek
Thirteen Mile Creek
Ten Mile Creek
99
Montana Creek
Dominion-Sulphur Placer Area
4327
Rosebute Creek
131
130
129
trails
main roads
rivers
contour lines
site no.
elevation
0
25
km

LEGEND

53...... John Wheelton, Minnie Bell Creek
62...... Donald MacDonald, Stowe Creek
63...... Richard Allen, Stowe/Montana Creek
64...... Vern Matkovich, Montana Creek
99...... Jonathan Ganter, Ten Mile Creek
129..... David Laurenson, Childs Gulch
130..... Paydirt Holdings Ltd., Black Hills Creek
131..... Rod Smith, Black Hills Creek

MINNIE BELL CREEK 116B/3

John M. Wheelton 63°54'N 138°35'W
Water Licence: PM99-091 1998, 2000, 2002
Klondike Placer Area **Site no. 53**

Operation/Location This property is located south of the Klondike Highway on a left limit tributary to Flat Creek and is still very much in its exploration stage. In the last five years, testing has been done by drilling various locations along the creek.

Equipment/Function Drilling was performed using a 6-inch augur drill mounted on a Bombardier Muskeg Carrier.

Wash Plant Test sluicing was accomplished with a long tom and small pump.

Ground Description The drill holes in 1998 were all done within the first kilometre of the mouth of Minnie Bell Creek. The downstream hole revealed thawed gravels, with some black muck combined with sand encountered at 10 feet and bedrock at 18 feet. The second hole was 25 feet to a purple-coloured bedrock overlain by wet and thawed gravels and muck, some of which was frozen, while the third drill hole not far away contained no gravels, just 18 feet of muck. The 2000 drill program consisted of seven drill holes moving upstream which included drilling a hole on the left limit bench at the location of a small tributary, which consisted of 8 feet of gravel over 4 feet of thawed muck covering a further 6 feet of gravel. Bedrock was soft enough at this point to drill a further 5 feet. Depths to bedrock ranged from 13 feet to 28 feet at the other locations and there was an infinite combination of gravels, soft clay and black muck which varied in thickness. In 2002, in a series of six drill holes, depths of up to 40 feet of black muck, 3 feet of unconsolidated slide bedrock and 5 feet of soft bedrock were encountered. The operator indicated he thought the material at 2000-foot elevation was probably formed during the Pliocene era. The creek ground was between 1600 and 1700 feet asl.

Mining Cuts No mining cuts were made during this period.

Water Supply and Treatment The small amount of water required for testing was acquired from the creek with no return or discharge.

Gold Drilling has not obtained a sufficient quantity or quality to describe.

Comments Mr. Wheelton noted that he believes the creek to be on the edge of a glacial front and accordingly the let down pay streaks will be difficult to locate. Mr. Wheelton has also tested areas on Vancouver Creek and the Little South Klondike River.

STOWE CREEK 115O/10

Donald Macdonald 63°40'N 138°57'W
Water Licence: PM98-070 1999, 2000
Klondike Placer Area **Site no. 62**

Operation/Location Donald MacDonald ran a 2-person operation in 1999 and 2000 along the left limit of Montana Creek, immediately upstream from the left limit tributary Stowe Creek, and on Stowe Creek.

Equipment/Function A Caterpillar D9H bulldozer was used to strip overburden, stockpile pay gravels and to remove tailings. A Caterpillar 235 excavator was used to feed the wash plant.

Wash Plant A 5-foot by 10-foot oscillating screen deck classified the pay gravels to ¾ inch minus. A single sluice run had expanded metal on Nomad mat as well as 1-inch riffles on Nomad mat. A Peabody Barnes 6-inch water pump supplied about 1000 igpm which was used to process approximately 80 cubic yards per hour.

Ground Description A 12-foot to 15-foot layer of frozen black muck overburden overlays 15 to 22 feet of gravel layers. Seams of fine, sandy gravel were interspersed with coarse gravel layers containing boulders up to 2 feet in diameter. Gold seemed to be carried in the coarser gravels.

Mining Cuts Three cuts were mined in 1999: 100 feet by 130 feet, 100 feet by 200 feet, 100 feet by 150 feet. Sluicing along the right limit on both Montana Creek and Stowe Creek occurred between 1999 and 2000.

Water Supply and Treatment Water was pumped from Stowe Creek and was recycled in an out-of-stream settling pond for the mining at both locations. Discharge was to Stowe Creek or to the swamps in the Montana Creek valley.

Aerial view of Donald MacDonald's operation on Stowe Creek.

GOLD The gold was reported to be fine-grained with approximately 10% -10+20 mesh, 30% -20+30 mesh, 40% -30+40 mesh and 10% -40 mesh. The purity of the gold was 770 fine.

COMMENTS This water licence was transferred from Lokey Mining Service in 1998 and was transferred to Richard Allen in 2001.

MONTANA CREEK AND STOWE CREEK 115O/10/11

Richard Allen	63°40'N 138°57'W
Water Licence: PM98-070	2001,2002
Klondike Placer Area	**Site no. 63**

OPERATION/LOCATION Mr. Allen moved to this site in 2001 from Eureka Creek with his longtime partner, Don Marino, and one camp person. They were joined by Kieran Daunt in the 2002 season and worked late into the fall on a stripping program.

EQUIPMENT/FUNCTION Most of the equipment was brought from the Eureka Creek site including one Caterpillar D9G and a Caterpillar D8H bulldozer. All were equipped with rippers and were used to strip cuts and prepare settling facilities, along with ramping tailings. The sluice plant was fed by a Caterpillar 235 excavator.

WASH PLANT The wash plant was a converted Clinton Creek screen deck, built by Tom Nichol, measuring 5 feet by 11 feet and screening to ¾ inch minus. The original sluice trays were reconfigured in the 2002 season to two 6-foot long by 2-foot wide runs lined with metal riffles and Nomad matting. The plant was run using a Morris pump powered by a Caterpillar 3406 engine and capable of 2000 igpm processing from 100 to 150 cubic yards per hour. The sluice rate on Montana Creek was roughly 100 loose yards per hour (2001) and only 80 loose yards per hour on Stowe Creek.

GROUND DESCRIPTION The ground, opened up on the left limit bench of Montana Creek in 2001, was composed of 1 foot of muck over 2 feet of gravels, which deepened to about 20 feet as mining moved further from the creek. Fifteen feet of black muck overlay about 5 feet of frozen, coarse, well-washed gravels intermixed with fine, sandy material. The sluice section varied in the amount of gravels while 2 to 3 feet of the soft bedrock was consistently sluiced. Mining on Stowe Creek proved to be a thicker layer of overburden ranging from 15 to 30 feet deep over 1.5 feet to cobbles and gravels, all of which were sluiced together with 2 to 3 feet of bedrock. Bedrock was a sandy decomposed granite which crumbled to sand size particles when travelled on. Cobbles were commonly 6 inches in diameter and very smooth and flat. A certain percentage of the cobbles derived from conglomerate material.

MINING CUTS Over the period of the 2 seasons, 2 cuts were completed on Montana Creek, measuring 120 by 120 by 15 feet deep and 120 by 300 by 18 feet deep. On Stowe Creek, an area 100 by 300 by 35 feet deep was tested and a stripping program of 1000 feet long by 100 feet wide by 10 to 20 feet deep was started.

WATER SUPPLY AND TREATMENT Water was acquired from reservoir ponds and effluent was settled in a series of two ponds on Montana Creek, which increased to three by the end of the season.

GOLD Gold recovered from both of these creeks tended to be fine-grained with a purity of 770.

MONTANA CREEK 115O/10,11

Vern Matkovich	63°40'N 138°57'W
Water Licence: PM96-081	1998
Klondike Placer Area	**Site no. 64**

OPERATION/LOCATION Vern Matkovich and a single helper ran a small bulk test along the left limit of Montana Creek for a portion of the 1998 season. The operation was located near the mouth of Bismark Creek.

EQUIPMENT/FUNCTION A Caterpillar D8 bulldozer was used to push pay material up for sluicing and for tailings.

WASH PLANT An old push in box leading into a single sluice run was used. The sluice run was lined with expanded metal and matting. A 6-inch pump supplied water for washing the pay gravels that had been pushed into the box. Very little sluicing was done at any given time.

GROUND DESCRIPTION The ground that was being bulk tested was on a left limit bench of Montana Creek and the depth increased away from the front of the bench. The total depth varied from 3 feet at the front to 15 feet at the back of the cut. The back of the cut had approximately 3 feet of frozen black muck overlying 12 feet of gravel. Bedrock tended to be decomposed graphitic schist. The gold was found on bedrock and only the lower 1 to 2 feet of gravels and 1 foot of bedrock was sluiced.

MINING CUTS The ground that was bulk tested in 1998 had been previously stripped. Approximately 100 cubic yards of gravel was sluiced.

WATER SUPPLY AND TREATMENT Water was pumped from a depression in the bench and the water was recycled. No discharge to Montana Creek occurred.

GOLD The gold was reported to be almost entirely fine-grained, flat and very thin. The purity of the gold was 789 fine.

TEN MILE CREEK 115O/12

Jonathan M. Ganter	63°32'N 140°00'W
Water Licence: PM96-074	1998, 1999,2002
Klondike Placer Area	**Site no. 99**

Operation/Location After 1998, Mr. Ganter did not actively sluice any gravels but prepared ground for future mining at better market prices. Instead, he exposed ground for thawing and intended to begin in the 2003 season.

Equipment/Function A D9H Caterpillar tractor, operated by David Bray of Dawson Creek, B.C., was used to strip the vegetation and black muck.

Wash Plant No wash plant was used during the period of this report.

Ground Description As this is a continuation of other mining on Ten Mile Creek, the ground evinces the same variations as previously discovered. Toward the upstream end of Ten Mile Creek the ground averages 10 feet of frozen black muck with 6 feet of gravels. The bedrock tends to be soft and wavy throughout. At the mouth, overburden ranged from 6 to 25 feet deep. The stripping program occurred about mid-creek, just downstream of Flume Creek.

Mining Cuts In 1999, an area 2500 feet long by 125 feet wide and averaging about 3 feet in depth was stripped by Mr. Bray. In 2002, some additional stripping was done just upstream from the camp.

Water Supply and Treatment The licence allows for in-stream reservoirs out of which recycling is conducted. Effluent is treated in either in-stream or out-of-stream settling ponds generally comprised of old mining cuts.

Gold Gold recovered to date on Ten Mile Creek has covered a variety of sizes. The purity of the gold runs around 830.

CHILDS GULCH 115O/7,10

David Laurenson	63°30'N 138°51'W
Water Licence: PM99-020	1999, 2000, 2001, 2002
Klondike Placer Area	**Site no. 129**

Operation/Location Dave and Sarah Laurenson mined from 1999 through 2002 on Childs Gulch, a left limit tributary of Black Hills Creek. The operation was located toward the top of the watershed, upstream of where Dorados Development had finished mining in the early 1990s. The operation shut down on Childs Gulch in the fall of 2002 and relocated to Black Hills Creek.

Equipment/Function A Caterpillar D8H bulldozer equipped with a ripper and U-blade was used for stripping, preparing pay gravels, clearing tailings and reclamation. A Terex 72-51 loader fed the sluice plant and did miscellaneous jobs.

David Laurenson, Childs Gulch. Note the bulldozer pushing aside oversize tailings.

Wash Plant A 10-yard hopper fed into a 4-foot wide by 14-foot long double deck screening plant. The top deck screened the pay gravels to -2 inches and the lower deck screened to -⅜ inch for 10 feet and to -¾ inch for 4 feet. The classified gravels were then washed through three sluice runs totalling 7 feet wide by 21 feet long. A combination of 1¼ inch angle iron riffles, expanded metal and matting was used. A 4-inch by 5-inch pump powered by a Ford engine supplied approximately 1200 igpm, needed to sluice between 50 and 60 cubic yards per hour.

Ground Description The operation moved upstream on Childs Gulch and the depth varied from 16 feet in 1999 to 30 feet by 2001. Generally a frozen black muck layer 8 feet deep overlies a mixture of boulders, logs and layers of silt, clay and frozen black muck. The ground "looks like it was just turned upside down." Bedrock tended to be decomposed with lots of blue clay. The lower 2 feet of gravels and up to 3 feet of bedrock were sluiced.

Mining Cuts A couple of small cuts and side pay were prepared and sluiced in 1999 and 2000. A cut 100 feet long by 40 feet wide by 30 feet deep was stripped and partially sluiced in 2001. The cut was finished in 2002. A small amount of sluicing was done on Black Hills Creek late in the fall of 2002.

Water Supply and Treatment Water from Childs Gulch was captured in recycle ponds near the sluice plant. A partial recycle system was used, with effluent being discharged back to Childs Gulch. Downstream settling ponds provided the final effluent treatment.

Gold Most of the gold was reported to be rough and flat. The purity varied from 740 to 750 fine.

BLACK HILLS CREEK 115O/7

Paydirt Holdings	63°30'N 138°52'W
Water Licence: PM99-118	1998, 1999, 2000, 2001
Klondike Placer Area	**Site no. 130**

OPERATION/LOCATION Paydirt Holdings have been mining on Black Hills Creek since the mid 1980s. From 1998 to 2000 there were three miners and one camp worker working a single 12-hour shift. In 2001, the number of mine workers was reduced to two and the operation was scaled down. As in past seasons, the operation has continued working upstream on Black Hills Creek.

EQUIPMENT/FUNCTION Three Caterpillar D9H bulldozers were used to strip overburden and to stockpile the pay gravels. A Caterpillar 235 excavator was used to feed the wash plant and a Caterpillar 980C loader was used to remove and stack tailings.

WASH PLANT A 6-foot by 8-foot dump box fed into a 10-foot long Derocker. A single sluice run, 3 feet wide by 40 feet long, was lined with expanded metal riffles over Nomad mat. A 10-inch Cornell water pump powered by a Caterpillar 3208 diesel engine supplied 2500 igpm of water, which was used to process approximately 100 cubic yards per hour.

GROUND DESCRIPTION A 10- to 15-foot layer of frozen muck overlays 2 to 3 feet of coarse gravel and then a layer of finer gravel with clay on top of decomposed bedrock. The bottom 2 to 4 feet of gravel plus 2 feet of bedrock were sluiced. Trees and stumps were found in the lower gravels.

MINING CUTS In 1998, 4 mining cuts, approximately 200 feet on each side, were processed. About the same amount was mined in 1999 and 2000. One cut, approximately 225 feet wide by 325 feet long, was stripped and sluiced in 2001. No sluicing was done in 2002 although people were on-site and no ground preparation occurred.

WATER SUPPLY AND TREATMENT Water was pumped from an in-stream reservoir and was treated in several out-of-stream settling ponds built from mined-out cuts along the left limit of Black Hills Creek.

GOLD The gold was cleaned up using a jig, a gold wheel and by hand panning. The gold tended to be flat, although a mixture of several types of gold was recovered. The purity varied from 660 to 680 fine.

Paydirt Holdings Ltd., Blackhills Creek.

BLACK HILLS CREEK 115O/10

Rod Smith 63°31'N 138°57'W
Water Licence: PM96-075 1998
Klondike Placer Area **Site no. 131**

OPERATION/LOCATION Rod Smith and one employee continued mining through 1998 near the top of Black Hills Creek. A small cut, previously mined along the left limit of Black Hills Creek, was increased in size.

EQUIPMENT/FUNCTION A Caterpillar D8H bulldozer was used for stripping and stockpiling the pay gravels. A Caterpillar 225 excavator fed the sluice plant and built/maintained the settling ponds.

WASH PLANT A scrubber-style trommel, 4 feet in diameter by 32 feet long, was used to classify the pay gravels. Two sections of screen were used. The first section of screen classified the gravels to -⅜ inches and the lower section classified the gravels to -¾ inches. The classified gravels from each section of screen were sluiced through separate sluice runs. The -⅜ inch material was washed through a 4-foot wide by 10-foot long run. The first 4 feet of the run was lined with Nomad matting and hydraulic riffles. The next 4 feet was lined with Nomad matting and modified (1½ inch top by 1-inch side) angle iron riffles. The last 2 feet of the run was lined with Nomad matting and expanded metal. The -¾ inch material was also washed through a 4-foot wide by 10-foot long sluice run. The first 2 feet of the run was lined with Nomad matting and hydraulic riffles. The next 6 feet of the run used Nomad matting and modified angle iron riffles. The last 2 feet was lined with Nomad matting and expanded metal. The wash plant was built by Rod Smith and was capable of processing approximately 50 cubic yards per hour. A 6-inch by 6-inch Monarch pump supplied the 1000 igpm needed for sluicing.

GROUND DESCRIPTION The cut that was increased in size during 1998 was approximately 25 feet deep with 12 to 15 feet of frozen muck overlying 10 to 13 feet of gravel. Bedrock was decomposed. Most of the gravel and up to 1 foot of bedrock was sluiced.

MINING CUTS A single cut was enlarged along the left limit of Black Hills Creek.

WATER SUPPLY AND TREATMENT Water was captured from Black Hills Creek and an unnamed right limit tributary of Black Hills Creek in an in-stream reservoir and then pumped to the wash plant. The effluent was treated in a series of out-of-stream settling ponds downstream from the operation before being discharged back into Black Hills Creek.

GOLD A variety of gold was recovered from this site although most of the gold was flat, round and about 12 mesh size. An occasional nugget as large as ⅓ ounce was recovered and some wire gold showed up. The purity was 680 fine.

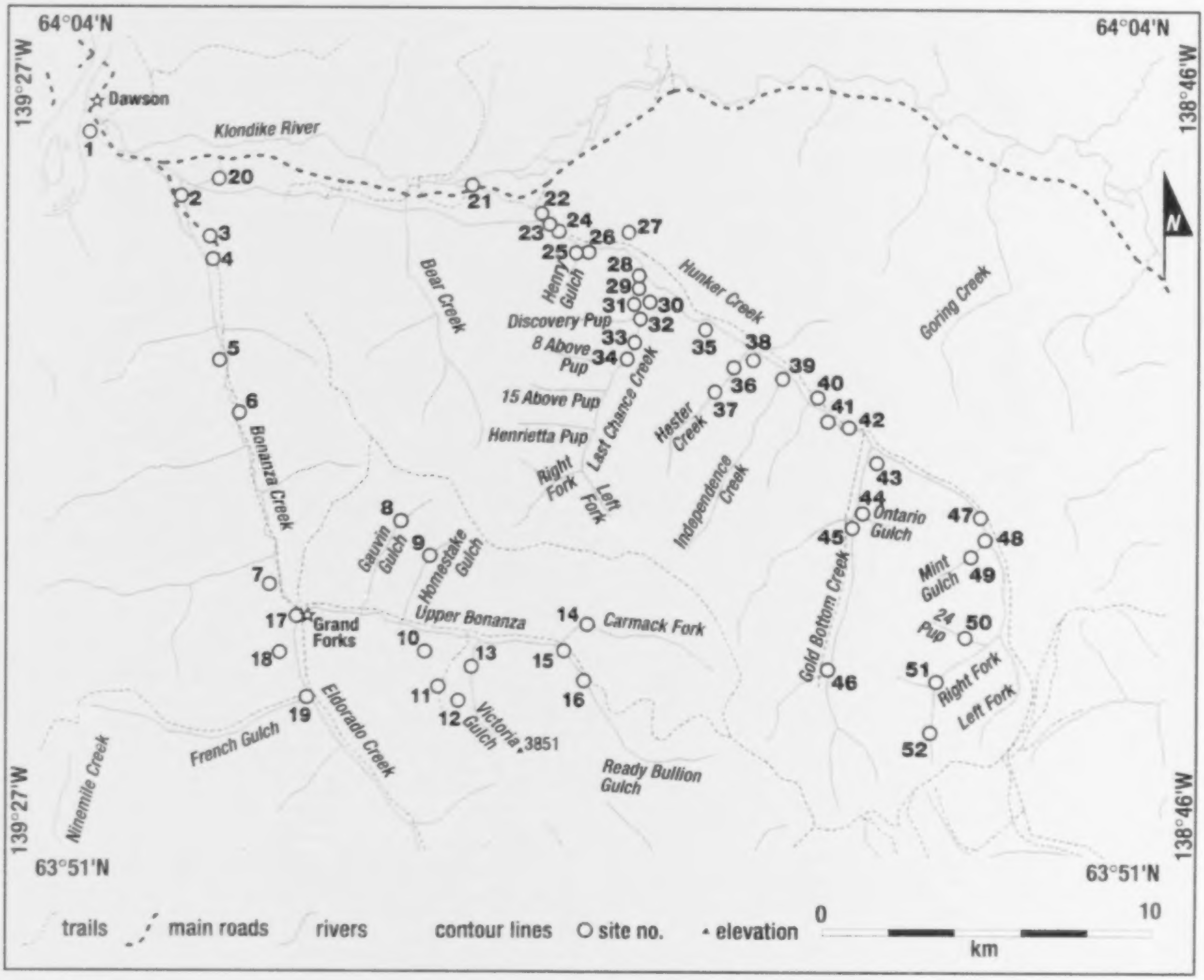
Excavator feeding pay material to Rod Smith's 4-foot by 32-inch trommel on Blackhills Creek.

KLONDIKE:

BONANZA-HUNKER

PLACER AREA

SITES 1-52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Klondike River
Bear Creek
Henry Gulch
Hunker Creek
Goring Creek
Discovery Pup
8 Above Pup
15 Above Pup
Henrietta Pup
Last Chance Creek
Right Fork
Left Fork
Hester Creek
Independence Creek
Ontario Gulch
Gold Bottom Creek
Mint Gulch
24 Pup
Right Fork
Left Fork
Bonanza Creek
Gauvin Gulch
Homestake Gulch
Upper Bonanza
Carmack Fork
Grand Forks
Eldorado Creek
French Gulch
Victoria Gulch
3851
Ready Bullion Gulch
Ninemile Creek
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main roads
rivers
contour lines
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LEGEND

1...... Graham and Geoffrey Jacobs, Lousetown Bench
2...... Micheal Creaven, Bonanza Creek
3...... Clive Nicholson, Lovett Gulch
4...... Tim Coles, Bonanza Creek
5...... Kohlman Exploration and Mining Ltd., Bonanza Creek
6...... Wolreid WGR Mining Ltd., Bonanza Creek
7...... Ivan Daunt, Skookum Gulch
8...... W. L. Roberts and Edward White, Gauvin Gulch
9...... Alfred and Marlene Roberts, Homestake Gulch
10...... Henry Gulch Placers, O'Neil Gulch-Upper Bonanza
11...... Jerry Bryde, 7 Pup
12...... Everett Kissler, 7 Pup/Victoria Gulch
13...... Ray and Shirley Anderson, Victoria Gulch
14...... 6077 Yukon Ltd., Carmack Fork
15...... Chesla McGee, Upper Bonanza
16...... 6077 Yukon Ltd., Upper Bonanza Creek
17...... Wolreid WGR Mining Ltd., Bonanza Creek
18...... Beron Placers, Eldorado Creek
19...... James Archibald, French Gulch/Eldorado Creek
20...... Richard Zimmer, Klondike River
21...... Wayne Fischer, Hunker Creek
22...... Farleys Machine Inc., Hunker Creek
23...... T.D. Oilfield Services Ltd., Hunker Creek
24...... Henry Gulch Placers, Hunker Creek
25...... Rick Gillespie, Henry Gulch
26...... Wolreid WGR Mining Ltd., Hunker Creek
27...... Peter Gould, Hattie Gulch
28...... Wolreid WGR Mining Ltd., Last Chance Creek
29...... Henry Gulch Placers, Last Chance Creek
30...... Northway Mining, Last Chance Creek
31...... Favron Enterprises Ltd., Last Chance Creek
32...... Peter Erickon, Last Chance/Discovery Pup
33...... D. Gritzka and P. Erickson, Last Chance Creek
34...... Last Chance Placers, Last Chance Creek
35...... Tamarack Inc., Hunker Creek
36...... Emile Levesque, Hunker/Hester Creek
37...... The Nugget Factory, Hester Creek
38...... Peter Gould, Independence Creek
39...... Anton Kosuta, Independence Creek
40...... Graham and Geoffrey Jacobs, Hunker Creek
41...... David Gould, Hunker Creek
42...... Jack and Ian Fraser, Hunker Creek
43...... Mogul Gold Placers, Gold Bottom Creek
44...... Pay Streak Placers, Ontario Gulch
45...... Colonial Joint Ventures, Gold Bottom Creek
46...... Alfredo Aimola, Gold Bottom Creek
47...... Max Lanzinger, Hunker Creek
48...... John Erickson, Hunker Creek
49...... Grew Creek Ventures Ltd., Hunker Creek/Mint Gulch
50...... Gerald and Elizabeth Ahnert, 24 Pup/Hunker Creek
51...... Eureka Gold Panning Adventures, Right Fork-Hunker Creek
52...... Thomas McMahon, Right Fork-Hunker Creek

KLONDIKE RIVER 116B/3

Graham and Geoffrey Jacobs	64°02'N 139°25'W
Water Licence: PM99-081	1998, 1999, 2000
Bonanza-Hunker Placer Area	**Site no. 1**

Operation/Location These brothers ran a two-person operation high on the Lousetown Bench above the Klondike River, about ½ kilometre upstream from its confluence with the Yukon River.

Equipment/Function One Caterpillar D9H bulldozer was used for stripping overburden and levelling tailings. An Hitachi UH07 excavator was used to dig pay gravels and load a Dodge 10-yard dump truck which hauled the gravel to a Kobelco 907 excavator used to feed the wash plant.

Wash Plant A metal hopper fed to a 5- by 10-foot oscillating screen deck which classified pay gravels to ¾ inch. Two sluice runs were each 8 feet wide by 10 feet long with hydraulic riffles layering the first 4 feet. Tailings were removed and stacked by a 50-foot conveyor belt. A 5-inch water pump powered by a diesel engine recycled about 1200 igpm which was used to process approximately 80 yards per hour.

Ground Description Two or 3 feet of organic soil overlay 10 to 20 feet of mixed mud and gravel on top of White Channel gravel which was 10 to 15 feet deep. All of the White Channel gravel plus 1 or 2 feet of broken bedrock were sluiced.

Mining Cuts In 1998, old mine tailings were mined from a cut about 50 feet wide by 1000 feet long. In 1999, a new cut, 150 feet wide by 2000 feet long, was mined. During 2000, two cuts were excavated, 150 feet by 500 feet and 30 feet by 600 feet.

Water Supply and Treatment A 6-inch Ajax pump powered by a Deutz diesel engine supplied make-up water from the Klondike River via a 5-inch aluminum pipe up onto the bench where it was recycled in several large ponds located in old mining cuts. There was no discharge to any water course.

Gold Only a few small flakes among mostly powder gold, with fineness between 800 and 830, was cleaned up using a gold wheel.

Comments Upon mining was done, a very good job of reclamation at this site was completed, including the levelling and contouring of old mining and the accompanying cleanup.

BONANZA CREEK 116B/3

Michael Creaven	64°02'N 139°23'W
Water Licence: PM00-176	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 2**

Operation/Location Michael Creaven has been mining on the right limit near the mouth of the Bonanza Creek valley for eight years.

Equipment/Function A Case 580 excavator/loader was used to excavate pay gravel, feed the wash plant and remove tailings.

Wash Plant A screen deck 4 feet by 8 feet classified material to ⅝-inch and fed into a 16-foot long single sluice run 1-foot wide with angle iron riffle.

Ground Description Pay gravels continued to be mined from a 20-foot vertical face composed of alternating layers of black muck and gravel.

Mining Cuts Up to 1000 yards per season were excavated from mining cuts 20 to 40 feet long by 8 to 12 feet wide and 12 to 20 feet deep.

Water Supply and Treatment Ground water seepage was recycled in out-of-stream ponds and in old mining cuts from previous operations in the area.

Gold Gold was cleaned up using a micro concentrator and assayed around 800. It tended to be small, flat and dull coloured with no nuggets.

Comments Michael Creaven noted that 2002 was the first year he had a decent cleanup, and consequently he would likely return.

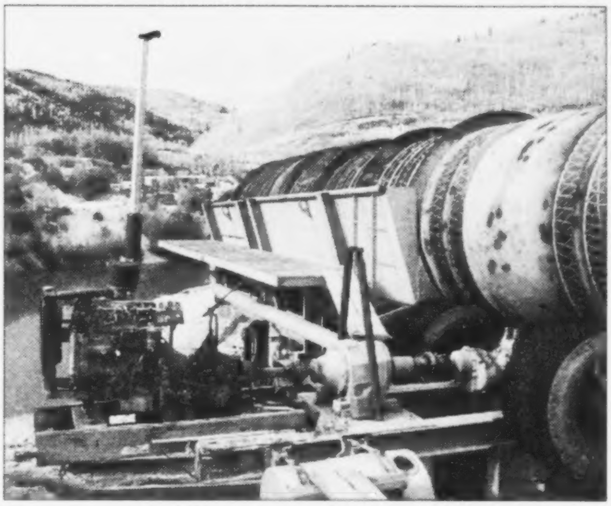
BONANZA CREEK 116B/3

Clive Nicholson	64°01'N 139°22'W
Water Licence: PM97-037	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 3**

Operation/Location Clive Nicholson continued his three-person operation on the first tier bench of Lovett Gulch, a right limit tributary of Bonanza Creek, about 3 kilometres upstream from the Klondike River valley.

Equipment/Function A Caterpillar D9 bulldozer was used to strip overburden and excavate pay gravel. Two Caterpillar 627 belly scrapers were used to strip and stack overburden and waste gravel. One Caterpillar 920 loader was used to feed the wash plant.

Wash Plant A large steel trommel, 7 feet in diameter by 40 feet long, fed a single sluice run, 4 feet wide by 30 feet long, with expanded metal riffles over Nomad matting. A 5-inch by 6-inch Paramount water pump, powered by a



Large trommel and dump box used by Clive Nicholson, set up among White Channel gravel tailings, near Lovett Gulch on Bonanza Creek.

Caterpillar 3304 diesel engine, provided 800 or 900 igpm which was used to sluice up to 100 cubic yards per hour, which was reduced to 60 cubic yards per hour in 2002.

GROUND DESCRIPTION White Channel tailings from the upper bench, up to 60 feet deep, were first stripped from on top of original frozen overburden, 35 feet to 45 feet deep. Frozen pay gravel was 6 to 10 feet deep, and all gravel plus 3 to 4 feet of bedrock were sluiced.

MINING CUTS In 1998 and 1999, about 200 feet by 200 feet were mined. In 2000 and 2001, larger cuts, about 400 feet by 200 feet, were mined each season. Between 30,000 and 40,000 cubic yards were sluiced each season and from 130,000 to 150,000 yards of overburden were stripped each year. A larger excavation was made in 2002, 400 by 200 feet, totalling 250,000 cubic yards of material that was stripped and sluiced.

WATER SUPPLY AND TREATMENT Water was recycled out-of-stream, within two abandoned mining cuts which have filled with seepage water.

GOLD Gold was flat and dull coloured with fineness around 795.

COMMENTS Mammoth tusks and bones were found in overburden and in frozen gravel.

BONANZA CREEK 116B/3

Tim Coles	64°01'N 139°21'W
Water Licence: PM00-201	2001, 2002
Bonanza-Hunker Placer Area	**Site no. 4**

OPERATION/LOCATION Tim Coles and Dave Brickner revisited a previously mined area on the right limit bench of Bonanza Creek between Lovett Gulch and Trail Gulch in 2001.

EQUIPMENT/FUNCTION One Komatsu PC400 excavator was used to strip overburden, dig pay gravel, load the dump truck and feed the wash plant. One 15-yard dump truck was used to haul pay gravel from the mining cut to the wash plant.

WASH PLANT An oscillating screen deck, 5 feet by 11 feet, with a single oscillating sluice run. Oversize tailings were removed by conveyor belt. A 6-inch by 5-inch water pump, powered by a GMC 271 diesel engine, delivered about 1500 igpm which was used to process up to 100 cubic yards per hour. A long tom and gold wheel were used for final cleanups.

GROUND DESCRIPTION White Channel gravel tailings from past mining of a high bench deposit were up to 25 feet deep on top of virgin ground. A total depth of about 40 feet of the tailings, frozen black muck and sand overlay pay gravels which were up to 5 feet deep with river cobbles and large rounded boulders close to fractured bedrock. All gravel plus about 3 feet of bedrock were sluiced.

MINING CUTS Due to restricted space and the depth of the ground only one cut, about 35 feet wide by 300 feet long, was mined over the two seasons.

WATER SUPPLY AND TREATMENT Water was pumped directly from Bonanza Creek using a small intake ditch, and was cleaned up in out-of-stream settling ponds measuring 300 feet by 50 to 60 feet wide. The only discharge was from minor seepage.

GOLD Mostly smooth gold particles with nothing heavier than 1 gram in weight was found. The fineness was around 790.

BONANZA CREEK 115O/14

Kohlman Exploration & Mining Ltd.	63°59'N 139°22'W
Water Licence: PM99-087	1998, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 5**

OPERATION/LOCATION Leo Twordik ran a two-person operation in 1998 at this site. There was no mining in 1999. In 2000 and 2001, Tim Coles and Cam Arkinstall ran a three-person operation on lower Bonanza Creek just upstream from Sourdough Gulch, along the left limit of the valley bottom. Tim Coles left the operation in 2002 to mine on upper Dominion.

Equipment/Function A Fiat Allis 41 bulldozer was used for stripping waste gravel. A John Deere 890 excavator with a 2-yard bucket and a Lieb Herr 981 excavator were used for digging pay gravel and stacking tailings. A Terex 50 ton rock truck was used to haul gravel and a Huff 120 loader with a 5-yard bucket was used to feed the wash plant.

Wash Plant A trommel, 6½ feet in diameter by 40 feet long, classified material to ½ inch and fed onto four oscillating sluice runs, 16 feet wide. An 8- by 10-inch Paco water pump powered by a Cummins 195 diesel engine provided approximately 2500 igpm which were used to process from 125 to 150 cubic yards per hour.

Ground Description Fifty feet of frozen overburden overlay 16 feet of pay gravel along the left limit of the Bonanza valley bottom. The centre of the valley was covered with dredge tailings and the valley walls were very steep on both sides.

Mining Cuts In 2000, a narrow cut about 10 feet wide by 400 feet long was removed from the left limit at the base of the hillside. In 2001, the cut moved into and up the hillside about 16 feet deep by 60 feet wide by 90 feet long. Mining continued in this vein on a smaller scale in 2002.

Water Supply and Treatment Water was pumped directly from Bonanza Creek and was settled in two large out-of-stream ponds in old mining cuts with seepage discharge only.

Gold Gold was mostly fines with a few small flakes and fineness around 780.

BONANZA CREEK 115O/14

Wolreid WGR Mining Ltd.	63°59'N 139°15'W
Water Licence: PM97-031	1998, 1999, 2002
Bonanza-Hunker Placer Area	**Site no. 6**

Operation/Location John Adam ran a one-person operation on Bonanza Creek, on the right limit of the valley bottom, between Mosquito Gulch and Queen Gulch under the auspices of Wolreid (Bob Cattermole) for 1998 and 1999. The property was not mined in 2000 or 2001. In 2002, Roland Berglund and Dan Trudeau took over mining the property and moved over to the left limit bench of Magnet Hill.

Equipment/Function An Hitachi 400 excavator was used to dig pay gravel as well as for cleaning out settling ponds. One Caterpillar D9 bulldozer was leased temporarily to rip bedrock, and one Caterpillar 966 loader was used full time to feed the wash plant and to remove tailings. Hydraulic stripping of the frozen overburden was accomplished with a 10 by 12-inch pump, powered by a Caterpillar 3206 diesel engine which supplied about 4000 igpm to the 4-inch nozzle water monitor. When the change in operators occurred in 2002, the equipment consisted of a D9 and a D8 Caterpillar bulldozer used for stripping and general purposes, a 988F Caterpillar loader, which fed the sluice plant, and a 280 Samsung hoe loaded a 15-yard Mack dump truck for hauling materials.

Wash Plant A 10-foot by 20-foot Derocker fed into an 8-foot by 8-foot sluice run with hydraulic expanded metal riffles, followed by a 3-foot wide by 30-foot long sluice run with 1½-inch angle iron riffles. A Lister 4-inch water pump supplied about 1500 igpm which was used to process about 100 cubic yards per hour. Mr. Berglund and Mr. Trudeau switched to a 4-foot trommel with a 12 by 12-foot Grizzly. The conveyor used was 2 by 30 feet and screened material to ½ inch minus. The sluice runs were 4 by 6 feet, lined with Hungarian riffles. A Monarch 6 by 6-inch pump was powered by a Deutz diesel engine capable of processing 800 igpm.

Ground Description Frozen black muck with ice lenses was up to 70 feet deep on top of about 6 feet of pay gravel. Bedrock was hard and chunky and broke off in blocks. All gravel plus about 1 foot to 18 inches of bedrock were sluiced. When the new operators moved to Magnet Hill, 6 feet of stockpiled gravel were sluiced.

Mining Cuts One mining cut, about 150 feet wide, was excavated back into the hillside about 35 to 40 feet per season for 1998 and 1999. When mining re-commenced in 2002, 2500 cubic yards of previously stripped material was sluiced in the fall.

Water Supply and Treatment Water was pumped from an in-stream reservoir and was cleaned in two out-of-stream settling ponds beside Bonanza Creek. This was increased to four out-of-stream ponds when new management took over, with a 50% water use recycle rate.

Gold Gold was mostly fines with a few larger flakes but no nuggets. Gold was cleaned up using a jig, a long tom and a vibrating gold table. Fineness was around 780.

Comments Several prehistoric mammoth bones and one tusk were found within the frozen overburden.

SKOOKUM GULCH 115O/14

Ivan Daunt	63°55'N 139°20'W
Water Licence: PM99-130	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 7**

Operation/Location Ivan Daunt has mined about 2000 feet, working upstream on Skookum Gulch, from its confluence with the left limit of Bonanza Creek, just below Grand Forks.

Equipment/Function One Komatsu bulldozer (D6 equivalent) was used for excavating pay gravel. One Caterpillar 951 crawler loader was used for removal of tailings. One Caterpillar 966B loader was used to feed the wash plant.

Wash Plant A small hopper over a 5 feet by 12 feet shaking screen deck classified pay gravels to ¾ inch. A single sluice run was 3 feet wide by 20 feet long with angle iron riffles over a plastic mat. A 6-inch by 6-inch Monarch pump, powered by a Perkins V8 diesel engine, delivered about 1200 igpm of water which was used to process up to 40 yards per hour.

Ground Description Frozen black muck overburden, with evidence of old mining shafts, was 25 to 30 feet deep. Pay gravels varied from 3 to 6 feet deep and were up to 20 feet wide in the gulch bottom. All gravels plus 2 to 3 feet of broken bedrock were sluiced.

Mining Cuts One main cut in the valley bottom centre averaged about 30 feet wide by 15 feet deep and was progressively worked upstream by 75 to 100 feet per season. Up to 4000 cubic yards per season were processed.

Water Supply and Treatment One in-stream reservoir pond in Bonanza Creek was used to supply make-up water to an in-stream recycle pond on Skookum Gulch. Several in-stream settling ponds were also located in Skookum Gulch, immediately below the wash plant but above the recycle pond.

Gold Gold was rough and angular with quartz attached and fineness around 660.

BONANZA CREEK 115O/14

W.L. Roberts and Edward White	63°57'N 139°14'W
Water Licence: PM97-033	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 8**

Operation/Location This two-person operation was located on upper Gauvin Gulch about 2½ miles upstream from its confluence with the right limit of Bonanza Creek. The property had been tested in 1996 and 1997 and mining began in 1998. The operation was reduced to one person in 2001.

Equipment/Function One International TD8 bulldozer was used to strip overburden and to push tailings gravel. A Case 480E excavator was used to dig pay gravel and load a Ford 15-yard dump truck, which hauled the pay gravel to the wash plant. A Bobcat 720 loader was used to feed the wash plant.

Wash Plant A 4-foot by 6-foot dump box on top of a 4-foot by 5-foot shaking wet screen deck fed into a single sluice run. The sluice run was 2 feet wide by 20 feet long, with expanded metal riffles over Nomad matting for the first 8 feet of length, then a section of slick plate followed by 2-inch angle iron riffles. A Gorman Rupp 4-inch pump, powered by a Deutz diesel engine, supplied about 600 igpm of water which was used to sluice 10 to 15 cubic yards per hour.

Looking at the mining cut on the left limit of upper Gauvin Gulch where W.L. Roberts used this small back hoe/loader to feed the wash plant in the foreground. Several large boulders removed from the pay zone can be seen near the wash plant.

Ground Description Frozen overburden varied from 25 to 50 feet deep on top of only 4 to 6 feet of gravel. Gravel was mixed with some clay. All gravels, plus 1 foot of decomposed bedrock, were sluiced. In 2002, the operator encountered 12 feet of overburden, with bedrock at 34 feet. The grey gravels contained large quartz boulders and some serpentine.

Mining Cuts One mining cut in the centre of the valley bottom was about 60 feet wide, and was stripped and processed about 30 feet long in 1998, 50 feet long in 1999, 30 feet long in 2000 and 36 feet long in 2001. A similar size cut was mined in 2002, totalling around 2500 cubic yards.

Water Supply and Treatment Near the top end of Gauvin Gulch there was very little creek water, so spring meltwater and groundwater seepage were recycled within two in-stream settling ponds in Gauvin Gulch, with seepage discharge only.

Gold Rough, angular gold with some dendritic nuggets was cleaned up using a long tom and a gold wheel, and had fineness around 664.

Comments One of the partners in this operation, Edward White, passed away on 24 June 1999.

BONANZA CREEK 115O/14

Alfred and Marlene Roberts	63°56'N 139°16'W
Water Licence: PM99-064	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 9**

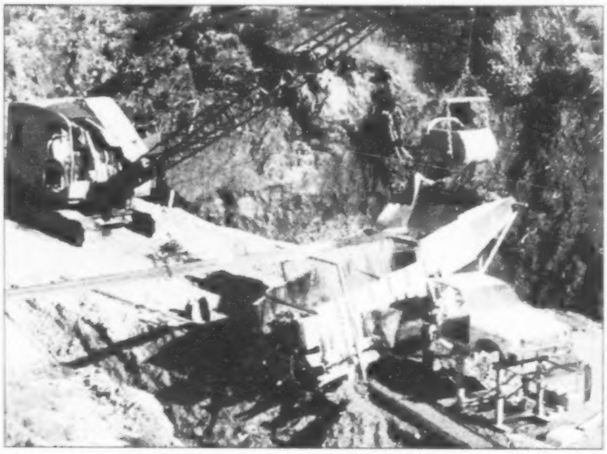
OPERATION/LOCATION This two-person family operation has mined in the centre of upper Homestake Gulch, about two miles upstream from its confluence with the right limit of Bonanza Creek, for more than 20 years. The bottom of Homestake Gulch was about 100 feet wide in this area, with very steep sides which got steeper toward the upstream end of the claims.

EQUIPMENT/FUNCTION A Caterpillar D8H bulldozer was used for stripping overburden, digging gravel, and pushing pay gravel toward the wash plant. A Bucyrus-Erie 20B drag line, with a ½-yard bucket, was used to feed the wash plant and to clean out the settling ponds.

WASH PLANT A Kotman-Athey wet shaking screen deck, 5 feet by 10 feet, classified material to 1 inch, followed by one sluice run, 24 inches wide by 20 feet long, with expanded metal riffles for the first 12 feet and then 8 feet of 1-inch riffles at a slightly steeper slope. In 1998, a new Gorman Rupp 6-inch pump was added, powered by a GM diesel engine, supplying about 500 igpm of water which was used to process 25 cubic yards per hour.

GROUND DESCRIPTION Frozen black muck overburden was 15 to 20 feet deep on top of 2 to 6 feet of pay gravels mixed with slide bedrock. All gravels, plus 2 to 3 feet of decomposed broken bedrock, were sluiced.

MINING CUTS In 1998 and 1999, overburden was stripped and pay gravel excavated from one cut up to 50 feet wide by 500 feet long, with about 1500 cubic yards sluiced in 1998 and 1200 cubic yards sluiced in 1999. In 2000 and 2001, the pay streak narrowed to about 20 feet wide and one cut was stripped and mined about 300 feet long. Approximately 2000 cubic yards were processed in 2000, and in 2001 about 1300 cubic yards were sluiced. By 2002, mining had been completed and Mr. Roberts spent the season performing reclamation work, dewatering settling ponds, recontouring valley sides with tailings and overburden.



Close-up view of Alf Roberts using a drag line with ½ yard bucket, to dig pay gravel and feed the wash plant, in Homestake Gulch.

WATER SUPPLY AND TREATMENT Water was pumped from one in-stream recycle pond, 50 feet wide by 150 feet long. Sluice water was directed through two out-of-stream settling ponds before being recycled.

GOLD Dull coloured, chunky, angular gold, mostly larger than 10 mesh, had a fineness around 664 and was cleaned up using a long tom and gold wheel.

COMMENTS Mine shafts with old clothing, tin cans and tools, were found in the frozen overburden and gravel. An old drift with a wooden ore box on wooden tracks was opened along the left limit.

BONANZA CREEK 115O/14

Henry Gulch Placers	63°55'N 139°16'W
Water Licence: PM95-057	1998, 1999, 2000
Bonanza-Hunker Placer Area	**Site no. 10**

OPERATION/LOCATION John Alton and Marty Knutson ran a four-person operation on Upper Bonanza Creek below O'Neil Gulch, in 1998 and 1999 as well as in O'Neil Gulch, a left limit tributary of Upper Bonanza Creek, in 1998, 1999 and 2000.

EQUIPMENT/FUNCTION One Caterpillar 235 excavator was used to strip overburden, dig pay gravel and feed the wash plant. A Caterpillar D9G bulldozer was used for stripping, and two Caterpillar D350 haul trucks were used to carry pay gravel to the wash plant. A Caterpillar 980B loader was used for removing tailings.

WASH PLANT A shaker deck classified to ¾ inch and fed into a 4-foot by 10-foot sluice run with angle iron riffles, and then into three 4-foot wide oscillating sluice runs with 1-inch expanded metal riffles over Nomad matting.

GROUND DESCRIPTION While the Upper Bonanza Creek valley bottom was covered with dredge tailings, the right limit below O'Neil Gulch had 12 to 14 feet of thawed muck overburden on top of 6 to 8 feet of gravel which contained some large quartz boulders close to bedrock. The bottom 4 feet of gravel plus 2 feet of bedrock were sluiced. Within O'Neil Gulch, there was frozen organic overburden up to 12 feet deep on top of gravel layers up to 10 feet deep.

Looking upstream on O'Niel Gulch at Henry Gulch Placers using an excavator to dig pay gravel and feed the wash plant.

MINING CUTS Along the left limit of the Upper Bonanza Creek valley, one cut along the right limit rim was 60 feet wide by 20 feet deep and was mined for a total length of about 3500 feet. Within O'Neil Gulch, one cut about 800 feet long by 75 feet wide was stripped in 1998 and 1999, and then the bottom 600 feet by 75 feet were sluiced in 2000.

WATER SUPPLY AND TREATMENT Water was supplied from an in-stream reservoir and was settled in out-of-stream ponds with a creek bypass channel on Upper Bonanza Creek.

GOLD Most of the gold was fine-grained. Cleanup was performed with a jig and a gold wheel and the fineness ranged around 800. Within O'Neil Gulch, gold recovered included some small crystalline nuggets and a few nuggets with quartz attached. Fine gold was about 55% smaller than 14 mesh, 40% between 6 and 12 mesh and less than 5% larger than 4 mesh.

COMMENTS Old tools like shovels and picks, and other evidence of early mining as well as frozen buffalo bones were found.

VICTORIA GULCH 115O/14

Jerry Bryde	63°54'N 139°14'W
Water Licence: PM00-153	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 11**

OPERATION/LOCATION Jerry Bryde has run a one-person operation for the past 15 years, located at the uphill end of 7 Pup, a left limit tributary to Victoria Gulch, immediately below the historic Lone Star Mine hard rock location.

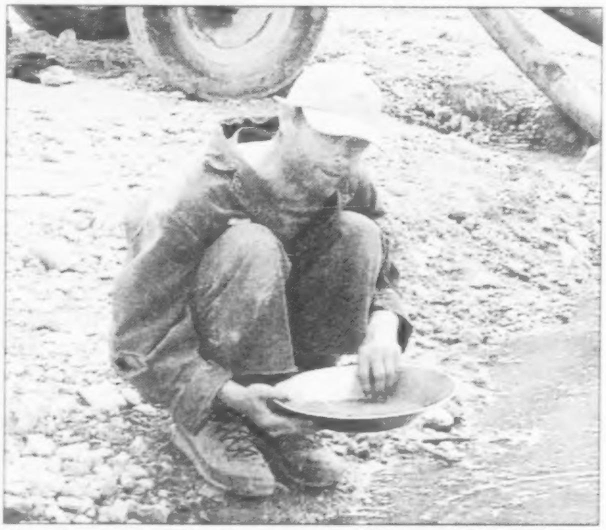
EQUIPMENT/FUNCTION A Caterpillar D7 bulldozer was used to excavate pay gravel and feed the wash plant. A Caterpillar 941B track loader with a 1½-yard bucket was used to stack tailings and for back up. An Insley dragline with ½-yard bucket was used to clean out settling ponds.

WASH PLANT A 30 feet long by 10 feet wide dump box fitted with a water monitor, washed into an Overstrom ¾-inch screening deck, 4 feet wide by 8 feet long, with two sluice runs, each 2 feet wide by 12 feet long, lined with expanded metal riffles over Nomad mat. A 4-inch Gorman Rupp water pump, powered by a Lister diesel engine, delivered about 400 igpm which was used to process from 20 to 30 cubic yards per hour.

GROUND DESCRIPTION Up to 2 feet of organic overburden, mixed with angular rock, overlay 2 to 4 feet of mixed gravels and clay seams, on top of decomposed Klondike schist bedrock with quartz veins. All overburden below the moss layer, plus all gravel, was sluiced. In the area worked in 2002, there was up to 3 feet of slide rock and soils with quartz fragments. From 3 to 6 feet, the composition changed to include clays, sands and some gold. The altered schist showing quartz veining and serpentine, interspersed with shear zones, appeared below 6 feet. Associated heavy minerals recovered during the sluicing process included abundant barite, goethite (after pyrite) and minor amounts of magnetite.

MINING CUTS From 1500 cubic yards to 3000 cubic yards per season were excavated from cuts about 6 feet deep by 100 feet long, with widths varying between 60 feet to 120 feet per season. In 2002, approximately 1700 cubic yards were processed from a pit 100 by 80 by 6 feet deep. All sections below moss to the unaltered bedrock are sluiced. Final cleanups were done with a long tom sluice box, panning and blowing.

WATER SUPPLY AND TREATMENT Seepage water from the old Lone Star adit, known as the Boulder Lode, was siphoned



Jerry Bryde doing final cleanup using a gold pan on 7 Pup.

into a 1½-inch polyethylene pipe about 3500 feet long which delivered about 8 igpm to the recycle pond which also collected spring run off and spring water when zones were active. This recycle pond was roughly 150 feet long by 100 feet wide by 10 feet deep. The settling facility was 150 by 100 by approximately 6 feet, deep with no surface discharge. The operation relied on 100% recycle.

Gold Bright, shiny angular and crystalline gold was recovered, some with quartz attached. Mesh sizes ranged from 5% -10 mesh, 65% from +10 mesh to +60 mesh and 30% at -60 mesh. Composition was 80.615% gold, 19% silver and .02% copper.

Comments In areas that have been excavated and exposed in situ, material deteriorates rapidly due to the high sulphide content (pyrite). These areas are quickly inhabited by wild rhubarb, fireweed and willows. Abandoned eight-year-old settling ponds are now dense with willows that have grown to a height between 8 and 10 feet. Attempts to utilize these ponds as vegetable gardens have proven interesting and highly productive. Quartz float with visible gold veining is common at this site. Sadly, to date, the only market has been the Alaskan tourists. Collecting and preserving antique mining machinery has proven very rewarding to this operation, including the highlight: a Mietz and Weiss 15 horsepower hot bulb oil engine, circa 1902, with compressor!

VICTORIA GULCH 115O/14

Everett Kissler	63°54'N 139°14'W
Water Licence: PM96-089	1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 12**

Operation/Location Everett Kissler took over this one-person operation in 1999 from Peter Bodin. Located near the top end of 7 Pup, a left limit tributary of Victoria Gulch, on Upper Bonanza Creek.

Equipment/Function A Caterpillar 966 loader was used to dig pay gravel, feed the wash plant and remove tailings.

Wash Plant A shaking screen deck about 10 feet by 10 feet was followed by a single sluice run 2 feet wide by 21 feet long with expanded metal riffles over Nomad matting. A Gorman-Rupp 4-inch water pump supplied about 400 igpm of water which was used to sluice about 25 cubic yards per hour.

Ground Description There was no overburden left on the surface in the area of mining; surface gravels mixed with tailings from old workings occurred throughout with depths varying from 5 feet minimum to 20 feet maximum. All gravel was sluiced from surface to bedrock.

Mining Cuts One main cut to near the middle of the claim was mined at a rate of about 2000 cubic yards per season.

View of Jerry Bryde's shaker deck and sluice run set up in the mining cut on 7 Pup.

Close up view of the dump box, shaker plant and sluice runs used by Everett Kissler on 7 Pup, a left limit tributary to Victoria Gulch on Upper Bonanza Creek.

Water Supply and Treatment Surface runoff was minimal this high up on the hill side but seepage water was recycled in two settling ponds about 50 feet by 50 feet each.

Gold Coarse gold was found with a few small nuggets, some with silver attached, and a fineness around 860.

VICTORIA GULCH 115O/14

Ray and Shirley Anderson	63°54'N 139°13'W
Water Licence: PM99-075	2000
Bonanza-Hunker Placer Area	**Site no. 13**

Operation/Location Ray and Shirley Anderson had been unable to mine in 1996 due to glaciation on a major portion of Victoria Gulch. This condition continued to plague the operation until the 2000 season when they were able to resume activity in the bottom centre of Victoria Gulch, about ½ kilometre upstream from its confluence with the left limit of Upper Bonanza Creek. No activity or water use occurred in 2001 or 2002.

Equipment/Function A Case 1150 track loader was used to strip overburden, dig pay gravel, feed the wash plant and remove tailings.

Wash Plant A 10-foot square hopper fed onto a 5-foot by 7-foot shaker deck which classified to ¾ inch. A single sluice run was 30 inches wide by 12 feet long with expanded metal riffles over Nomad matting. A Homelite 3-inch pump provided about 300 igpm which was used to process about 30 cubic yards per hour.

Ground Description Victoria Gulch in this area is steep sided. Overburden had been previously removed from the valley bottom and pay gravels averaged 8 feet deep. All gravel, plus about 1 foot of bedrock, was sluiced.

Mining Cuts One main cut has been worked progressively upstream along the left limit of the valley bottom until glaciation prevented further mining. In 2000, the Andersons reported 150 hours of sluicing.

Water Supply and Treatment A small in-stream reservoir was maintained at the upstream end of the claims with three in-stream settling ponds below.

Gold Coarse gold has been recovered with fineness around 820.

BONANZA CREEK 115O/14

6077 Yukon Ltd.	63°55'N 139°08'W
Water Licence: PM97-055	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 14**

Operation/Location Dave Trainer and Barbara Coomes started mining on Carmack Fork about ½ mile upstream from its confluence with the right limit of Upper Bonanza Creek. This ground was first tested in 1997 and mining began in 1998.

Equipment/Function Two Caterpillar bulldozers, a D8K and a D7, were used to strip overburden and excavate gravel. A Caterpillar 980 loader was used to remove tailings and an American M25 excavator (235 equivalent) was used to feed the wash plant. In 2002, only the D8K Caterpillar bulldozer and a Fiat Allis 45 front-end loader were employed.

Wash Plant A de-rocker dump box, 10 feet wide by 15 feet long, fed into a single sluice run, 4 feet wide by 30 feet long, with oscillating angle iron riffles. A 6-inch Perkins water pump supplied about 2000 igpm used to sluice 100 to 150 cubic yards per hour.

Ground Description Organic overburden, from 8 to 20 feet deep, was thawed near the creek channel and frozen along the sides of the valley. Gravel layers were up to 12 feet deep and the bottom 6 feet of gravel, plus 1 foot of bedrock, were sluiced. Bedrock was composed of wavy, decomposed schist.

Mining Cuts In 1998, three small cuts totalled approximately 30 feet wide by 150 feet long. In 1999, one cut was 65 feet wide by 400 feet long. In 2000, one cut was about 30 feet wide by 100 feet long and in 2001, at a wider part of the valley as mining moved upstream the cut was about 200 feet wide by 400 feet long. Two cuts were mined in 2002, measuring 500 by 50 feet and 100 by 100 feet.

Water Supply and Treatment Make-up water only was pumped directly from Carmack Fork and process water was recycled from within an out-of-stream settling pond. The pond itself was approximately 300 by 150 feet in size. A creek bypass channel around the settling pond was built and maintained along the left limit of the valley bottom.

Gold Cleanups were conducted using a long tom. Fine powder gold only, no flakes or nuggets, with fineness of 692. In 2002, the gold recovered was slightly rougher in texture.

Comments Evidence of oldtimers' workings (shafts) and various ancient animal bones have been found. Wayne Hawkes of Dawson City completed most of the mining done in 2002. A move to upper Little Blanche Creek is being considered for the 2003 season.

BONANZA CREEK 115O/14

Chesla McGee	63°54'N 139°08'W
Water Licence: PM00-175	1998, 1999, 2000
Bonanza-Hunker Placer Area	**Site no. 15**

Operation/Location This one-person operation, located on Upper Bonanza Creek above the Parks Canada Heritage Reserve, was mined by Edward Paine since the early 1990s until August of 1998. The operation and water licence were transferred to Chesla McGee, who mined in 1999 and 2000.

Equipment/Function In 1999, a Caterpillar D9 bulldozer was leased to enlarge the mining cut by stripping overburden and waste gravel. A John Deere 350 track loader with a ¾-yard bucket was used to excavate pay gravel, feed the wash plant, remove tailings and maintain settling ponds.

Wash Plant A 4-foot by 8-foot dump box with water spray bar fed onto a 3 by 5-foot shaking screen deck which classified material down to ¾ inch. This was followed by a single sluice run, 21 inches wide by 12 feet long, with expanded metal riffles over Astroturf matting. A Gorman-Rupp 3-inch pump, powered by a Wisconsin 16 horsepower gasoline engine, supplied 100 igpm of water which was used to process approximately 10 cubic yards per hour.

Ground Description Frozen overburden was 4 to 6 feet deep on top of 16 to 20 feet of sandy gravel layers mixed with mud and silt layers. The bottom 4 feet of gravel, plus approximately 3 feet of decomposed bedrock, were sluiced.

Mining Cuts One main mining cut near the centre of the valley bottom was increased from about 60 feet by 100 feet in 1998 to about 100 feet square in 1999 by stripping overburden and waste gravels. Pay gravel had been excavated and sluiced at a rate of approximately 500 cubic yards per season.

Small track-loader and wash plant used by Chesla McGee on Upper Bonanza Creek.

Water Supply and Treatment Make-up water was supplied from Bonanza Creek via a short gravity ditch to an out-of-stream recycle pond. There was no discharge other than minor seepage.

Gold Coarse gold was found with some quartz attached and flat flakes had a fineness of around 790.

Comments There has been no evidence of any old mine workings to date at this site.

BONANZA CREEK 115O/14

6077 Yukon Ltd.	63°54'N 139°07'W
Water Licence: PM98-048	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 16**

Operation/Location Vern Trainer continued mining on Upper Bonanza Creek above Carmack Fork and progressing upstream toward the confluence with Ready Bullion Gulch. This two-person, family operation has been mining at this location for the past ten years.

Equipment/Function Two Caterpillar D8 bulldozers were used for stripping overburden and digging pay gravel. A Caterpillar 235 excavator was used to feed the wash plant and a Caterpillar 980 loader was used to remove tailings. One JVC excavator was used for cleaning out settling ponds.

Wash Plant A derocker dump box, 10 feet by 15 feet, fed into a single sluice run, 4 feet wide by 30 feet long. The first 15 feet had ⅜-inch punch plate over expanded metal riffles, and the last 15 feet had angle iron riffles. An 8-inch by 10-inch Morris water pump, powered by a Pekins diesel, supplied about 2000 igpm which were used to sluice approximately 120 cubic yards per hour.

Ground Description Frozen organic overburden, 15 to 20 feet deep, was stripped from on top of the gravel layer, which averaged 6 to 8 feet deep. All gravel, plus 1 or 2 feet of decomposed bedrock, were sluiced.

Mining Cuts Mining cuts in the valley bottom were of various sizes ranging from 40 to 150 feet wide. In 1998 and 1999, the mining cuts were less than 200 feet long. In 2000, 2001 and 2002, the mining cuts averaged 500 feet long each year.

Water Supply and Treatment Water was pumped from an in-stream reservoir and settled in two out-of-stream ponds. A creek bypass channel was constructed along the left limit of the valley bottom around the area being mined and the settling ponds.

Gold Mostly found was fine gold with a few small, flat flakes and fineness of 750.

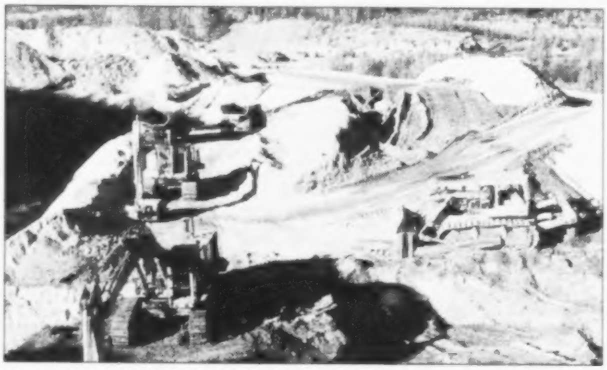
Comments Vern Trainer and his son Dave Trainer worked together at this operation and also at Dave Trainer's operation on nearby Carmack Fork.

BONANZA CREEK 115O/14

Wolreid WGR Mining Ltd.	63°55'N 139°19'W
Water Licence: PM97-032	1999, 2000
Bonanza-Hunker Placer Area	**Site no. 17**

Operation/Location John Alton and Marty Knutson leased this ground at Grand Forks and ran a four-person operation, excavating pay gravel from the left limit of Eldorado Creek, just upstream from its confluence with Upper Bonanza Creek.

Equipment/Function A Caterpillar D9H bulldozer was used for stripping overburden and waste gravel as well as for flattening tailing piles. Two Caterpillar excavators, one 235 and one 225, were used to excavate pay gravel and load two D350 dump trucks which hauled pay gravels to the wash plant. One Caterpillar 980B loader was used to feed the wash plant and remove tailings.



Overview of John Alton and Marty Knutson's mining cut near Grand Forks, showing two excavators digging pay gravel to load into dump trucks, plus one bulldozer stripping waste gravel.

Wash Plant A 10-foot by 20-foot derocker with spray bars washed gravel and classified material down to 2 inches, followed by two oscillating sluice runs, 4 feet wide each, with expanded metal riffles on Nomad matting.

Ground Description Washed White Channel gravels of up to 15 feet deep from previous bench operations were stripped from on top of older dredge tailings measuring 20 feet deep. Below these old tailings, along the left limit rim of the valley bottom, a 5 to 6-foot seam of frozen black muck overburden overlay a gravel layer 2 to 4 feet deep. All of this gravel layer, plus about 2 feet of blocky bedrock, was processed.

Mining Cuts Most of 1999 was spent stripping overburden and waste gravel from one main mining cut which was about 100 feet wide by 300 feet long. Approximately 60,000 cubic yards of waste gravels were stripped in 1999 and about 10,000 cubic yards of pay gravels were sluiced. In 2000, another 50,000 cubic yards of material was stripped, out of which 12,000 cubic yards were sluiced.

Water Supply and Treatment Sluicing water was pumped from a large, out-of-stream reservoir which was fed by seepage from Upper Bonanza Creek. Effluent was settled in two large out-of-stream settling ponds in old mining cuts located immediately below the confluence of Eldorado Creek and Upper Bonanza Creek, discharging into Bonanza Creek.

Gold Chunky gold and some nuggets with quartz attached were recovered, plus fine gold. Sixty percent of the gold ran below 14 mesh, 35% from 6 to 12 mesh and less than 5% larger than 4 mesh.

Comments Evidence of previous mine works recovered from the area included many old hand tools. Mining was completed in 2000 but in 2001 the operators returned to the site and back sloped the walls of the flooded mine cut and used sandy gravel to create a beach close to the KVA free panning claim at Grand Forks.

ELDORADO CREEK 115O/14

Beron Placers	63°54'N 138°18'W
Water Licence: PM95-003	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Area	**Site no. 18**

OPERATION/LOCATION During the past four years Ron and Bern Johnson mined progressively upstream on Irish Gulch, since starting at its confluence with the left limit of Eldorado Creek in 1997.

EQUIPMENT/FUNCTION A Caterpillar D6C bulldozer was used for stripping and to pull a 6-inch auger drill used for setting explosives to dynamite black muck. A Caterpillar D8K bulldozer was used for stripping overburden and stockpiling pay gravel. A Caterpillar 245 excavator was used to dig pay gravel, feed the wash plant and clean out settling ponds. A Caterpillar 950 loader was used to remove tailings.

WASH PLANT A mobile wash plant mounted on wheels consisted of a 17 by 15-foot dump box and vibrating screen deck, 4 feet wide by 20 feet long, with four 4 feet wide by 10 feet long sluice runs which narrowed into a single sluice run 42 inches wide by 7 feet long. A conveyor 48 inches wide by 50 feet long was used to stack tailings. A Paco water pump, 8 inches by 10 inches, powered by a GM 871 diesel engine, supplied approximately 2500 igpm which was used to sluice up to 150 cubic yards per hour.

GROUND DESCRIPTION Frozen black muck overburden increased in depth as mining progressed upstream in Irish Gulch, starting with only 10 feet near the mouth and increasing to more than 50 feet deep on the upper right limit of the gulch. Near the middle of the gulch about 15 feet of black muck mixed with angular rocks covered pay gravels 3 to 5 feet deep. Up to 3 feet of broken bedrock was also sluiced.

MINING CUTS At the downstream end of Irish Gulch, mining cuts up to 300 feet long each were excavated to a width of about 75 feet. Mining moved upstream on the gulch at a rate between 300 and 500 feet per season, and width of cuts increased to 125 feet, then to a maximum of 150 feet. In 2000, a bench was discovered on the right limit that had been worked by oldtimers. This bench was finished in 2002, and extended for 600 to 700 feet upstream. The gravels buried under from 20 to 30 feet of black muck had been accessed by previous placer miners through drifts and production shafts.

WATER SUPPLY AND TREATMENT Water was pumped from a large reservoir/recycle pond located in the Eldorado Creek valley, uphill into Irish Gulch using more than 3000 feet of 10-inch aluminum pipe. A series of cross-valley rock-filled dams created permanent in-stream settling ponds in Irish Gulch.

GOLD Coarse, angular gold with numerous nuggets and fineness around 650 was recovered from Irish Gulch and cleaned up using a Wilfley table.

COMMENTS Many old shafts and other evidence of early mining was found in Irish Gulch. Reclamation at this site is progressive in nature, using mining cuts as settling facilities.

FRENCH GULCH/ELDORADO CREEK 115O/14

James Archibald	63°53'N 139°20'W
Water Licence: PM98-057	1998, 1999, 2000, 2001
Bonanza-Hunker Area	**Site no. 19**

OPERATION/LOCATION James Archibald has mined at the confluence of French Gulch and Eldorado Creek for more than 20 years. From 1998 to 2002, the mining operation was located in the Eldorado Creek valley, immediately downstream from the mouth of French Gulch.

EQUIPMENT/FUNCTION A Caterpillar DC6 bulldozer was used for road building and maintenance, a Caterpillar D8K bulldozer was used for stripping overburden and excavating pay gravel, and a Caterpillar 980B loader was used to feed the wash plant and remove and stack tailings.

WASH PLANT A Derocker screening plant, 10 feet wide by 20 feet long, classified material to 2½ inches. The single sluice run was 2½ feet wide by 24 feet long with angle iron riffles. An 8-inch by 10-inch Fairbanks Morris water pump, powered by a 471 Detroit diesel engine, delivered about 1300 igpm of water which was used to process roughly 55 cubic yards per hour.

GROUND DESCRIPTION The Eldorado Creek valley below French Gulch was covered with old dredge tailing piles, 20 to 30 feet deep. Residual pay gravel found below the dredge tailings and along the left limit of the valley varied in depth from a few feet up to a maximum of 15 feet deep near the rim.

MINING CUTS Mining was conducted along the Eldorado Creek valley on the left limit below French Gulch from 1998 to 2002. The cuts varied from 50 to 80 feet wide by a maximum of 500 feet long each year.

WATER SUPPLY AND TREATMENT Water was recycled within one large out-of-stream settling pond which had a minimal seepage discharge.

GOLD Small particle gold was recovered from below the dredge tailings, all smaller than 16 mesh, with a fineness of around 710. Gold recovered from the side pay was coarser, most of which was over 16 mesh, and had a higher ratio of gold to silver of around 760 fineness.

KLONDIKE RIVER 116B/3

Richard Zimmer	64°01'N 139°22'W
Water Licence: PM96-057	1998, 1999, 2000
Bonanza-Hunker Placer Area	**Site no. 20**

OPERATION/LOCATION Richard Zimmer and Brendon White both ran underground mining operations at Jackson Hill, on the left limit bench of the Klondike River, immediately upstream from its confluence with Bonanza Creek. During the winter months, an upper bench level deposit of frozen White Channel gravel was excavated and stockpiled from previously mined adits and drifts. Stockpiled pay gravels were sluiced during the summers.

EQUIPMENT/FUNCTION A Caterpillar 235 excavator was used to re-open the existing mine portals. A drill and two scoop trams were used underground and a dump truck hauled pay gravels to the wash plant. A Caterpillar 980B loader was used to feed the wash plant.

WASH PLANT An 8 by 12-foot shaking screen deck fed two oscillating sluice runs with hydraulic riffles that were each 24 inches wide by 20 feet long. A high pressure water pump, 6 inches by 5 inches, powered by a Cummins 290 diesel engine, supplied about 500 igpm sluicing 50 to 60 cubic yards per hour. Oversized rocks and gravel were discharged downhill and a sand screw was used to stack tailings.

GROUND DESCRIPTION The White Channel gravel deposit on Jackson Hill was mined at the intermediate bench level, just above the hillside bedrock. An adit about 20 feet wide by 10 feet high was drilled and excavated through the frozen gravel, hauling out the bottom 6 to 8 feet of gravel, and up to 4 feet of decomposed bedrock, for sluicing.

MINING CUTS Existing drifts into the base of the White Channel gravel from previous mining operations were extended about 20 feet wide by 10 feet high by up to 1100 feet in length per year each winter.

WATER SUPPLY AND TREATMENT Water was pumped from a dredge pond in nearby Klondike valley into a recycle/settling pond on the bench. It took from 10 to 14 hours to initially fill the pond and then only a few hours per week to acquire make-up water. Discharge from the recycle/settling pond was by seepage only.

GOLD Only powder gold was found, having fineness of around 820.

COMMENTS Jackson Hill is riddled with mining structures, from shafts to drifts to major tunnels, which can accommodate underground trams specifically designed for hauling the ore under the low ceilings. This system of mining relies on the ground remaining frozen while work is performed and mine portals are blocked in early spring to prevent thawing and/or entry. Some operations employ huge fans to maintain low temperatures during the winter mining season.

HUNKER CREEK 116B/3

Wayne Fischer	64°03'N 139°11'W
Water Licence: PM97-019	1998
Bonanza-Hunker Placer Area	**Site no. 21**

OPERATION/LOCATION Wayne Fischer and one other person ran a bulk test for part of the 1998 season at the mouth of Hunker Creek in the Klondike River valley.

EQUIPMENT/FUNCTION A Leibher excavator was used to excavate a test cut and for feeding the wash plant. A Timberjack 2500 loader was available for sluicing and miscellaneous jobs.

WASH PLANT The wash plant consisted of a vibrating screen deck mounted on a floating platform with sluice runs. The entire wash plant is self contained and run by electric motors. The 8-foot wide by 12-foot long screen deck classified the pay gravels to -¼ inch before being washed through four sluice runs 2 feet wide by 8 feet long. The sluice runs used hydraulic riffles and rubber matting. A 6-inch electric pump supplied water for sluicing from the recycle pond that the plant floated on. The plant was designed to process between 60 and 75 cubic yards per hour.

GROUND DESCRIPTION The ground was 35 feet deep with approximately 2 feet of silt and vegetation overlying 33 feet of mostly thawed gravels. Bedrock was hard and broken.

MINING CUTS A small cut was opened up, de-watered and the gravels were stockpiled next to the cut. A bulk test of approximately 1000 cubic yards were sluiced.

WATER SUPPLY AND TREATMENT The wash plant was built as a fully self-contained plant that floats on a pond. The water came directly from the flooded cut, and the pay gravels were sluiced back into the cut after the pay was removed and stockpiled. No direct discharge to any watercourse occurred.

GOLD Very little gold was recovered from the bulk test and an assay was not done.

HUNKER CREEK 116B/3

Farley's Machine Inc.	64°02'N 139°07'W
Water Licence: PM97-077	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 22**

OPERATION/LOCATION In 1998, Dave Farley began this operation at the mouth of Hunker Creek, immediately next to the Klondike Highway. Four miners and one camp person ran two 12-hour shifts in 1998, clearing off trees and brush before beginning the stripping work. A crew of five miners ran a single shift in 1999, stripping and sluicing. The operation was scaled down to a single shift of two miners in 2000 to do the sluicing. Mechanical work was done throughout most of 2001, with one pit partially excavated in the fall. Stripping and mechanical work continued through 2002.

EQUIPMENT/FUNCTION A Caterpillar 235 excavator and an EL-300 excavator were used along with a Caterpillar D-8K bulldozer for clearing and stripping in 1998. A Komatsu 355 bulldozer, a 769 dump truck and an O&K RH-75 excavator with a 13-yard bucket were added for stripping and sluicing in 1999. This equipment was used when needed during 2000 and 2001.

WASH PLANT A wash plant known as a 300 Maximizer was used. The pay gravels were dumped into a hopper which fed the sluice plant by conveyor. The gravels were washed and classified to 1-inch minus by four decks 8 feet wide by 4 feet long. The oversize gravels were carried off and stacked by conveyor. The 1-inch minus material was sluiced in two 66-inch wide by 20-foot long sluice runs. Both sluice runs used hydraulic riffles, expanded metal and Nomad matting. A 10-inch by 12-inch Cornell pump supplied the 3000 igpm needed to process approximately 200 cubic yards per hour.

GROUND DESCRIPTION The ground varied in depth but an average of 20 feet of silt overburden and 20 feet of gravel was encountered during stripping in 1999. The top 14 feet of gravel were wasted, and the lower 5 feet of gravel and 3 feet of bedrock were sluiced. The bottom 15 feet of the profile were found to be frozen in areas. The water table is near the surface, meaning the cuts required continuous de-watering. Power from Dawson City was brought in during 2000, allowing the cut to be de-watered with lower-cost electric pumps.

MINING CUTS A single cut measuring 60 feet wide by 900 feet long was excavated in 1998 and 1999. Approximately 72,000 cubic yards were stripped and 16,000 cubic yards were sluiced. A single cut, 90 feet wide by 300 feet long, was excavated during 2000. Approximately 20,000 cubic yards were stripped and 8,000 cubic yards were sluiced. A single cut was partially excavated immediately next to the Klondike Highway in 2001 and in 2002, but very little sluicing occurred.

WATER SUPPLY AND TREATMENT Due to the high water table in this location, constant de-watering was required for the mine pit. The water was pumped by pipeline over Hunker Creek to two out-of-stream settling ponds. Clean water then returned to the pit by gravity through another pipeline over Hunker Creek. A re-circulation system was used during sluicing with the effluent going into the mine pit prior to being pumped to the settling ponds. The only direct discharge that occurred was clean seepage water that was pumped directly to Hunker Creek when not sluicing.

GOLD The gold recovered in 1999 and 2000 was reported to be 80 to 90% -10 mesh with the remainder +10 mesh. The gold is typically flat, rough and dull with a purity of 780 fine. Jig wheels and tables were used for the clean-ups.

Farley's Machine Inc. on Hunker Creek.

HUNKER CREEK 116B/3

T.D. Oilfield Services Ltd.	64°02N 139°09'W
Water Licence: PM96-085	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 23**

Operation/Location This operation is located close to the mouth of Hunker Creek on the left side of the valley and extends for approximately 3 miles, covering a width of about 1000 feet. Doug Busat initially ran the mine for the years 1998 to 2001, employing six miners and one camp personnel, working a 12-hour shift daily. During 2001, a sale was negotiated with Dave Marsters of Grew Creek Ventures who also mined on Mint Gulch. Mr. Marsters took charge of the operation in late 2001 and mined in 2002 with a 12-person crew.

Equipment/Function A D9H Caterpilllar bulldozer equipped with a U-blade and ripper was used to strip overburden and push tailings. Two Caterpillar loaders, a 980B (5½-yard bucket) and a 980C (4½-yard bucket), along with a 245 Caterpillar backhoe with 4-yard cleanup bucket and an Hitachi EX270 backhoe with a ½-yard bucket were employed in various capacities around the property. Two MT36 27-tonne Moxi rock trucks were used to haul material, including pay gravels to the wash plant.

Wash Plant A screen deck wash plant with a 20-yard hopper dropped materials onto a grizzly. A 60-foot conveyor fed a 20-foot wide by 16-foot long sluice run lined with 1½ by ½-inch riffles and punch plate holes ¾ by ⅜ inches. The sluice run was sloped approximately 2½ inches per foot, lined with Nomad carpets and equipped with three 16-foot boiler boxes. Water was supplied by a Pasco 8 by 8-inch pump powered by a Caterpillar 3208 diesel engine and fed at a rate of about 2000 igpm. One hundred and twenty-five cubic yards were processed per hour.

Ground Description Maximum depth of overburden to bedrock was about 30 feet. The gravel was partially thawed with some frozen spots. Particle sizes were 12-inch in diameter to sand, with an average of 3 inches. Bedrock was flat and wavy and there was some evidence of old shafts and workings. Old bones that were recovered were in poor shape. Most of the work took place 25 feet below surface water levels. The sluice section was 8 to 10 feet, 2 feet of which was bedrock. It was noted that ground composition in 2002 averaged 44 feet in depth, with 6 feet of black muck and 38 feet of gravel before pay began. At that point, 6 feet of pay gravels and 2 feet of bedrock were sluiced.

T.D. Oilfield Services Ltd. on Hunker Creek.

Mining Cuts In 1998, a 900 by 300-foot cut was opened and approximately 350,000 cubic yards were mined. An even larger area was mined in 1999, approximately 1000 by 300 feet. In 2000, a 400 by 700-foot cut was excavated, equalling about 400,000 cubic yards. A slightly larger area was mined in 2001, 350 by 1000 feet. Production in 2002 was similar with about 130,000 cubic yards being sluiced.

Water Supply and Treatment Water was supplied by ground seepage and captured in an 800 by 800-foot recycling pond. Effluent was settled out in a series of 3 ponds, the sizes of which were: 150 by 50 by 20 feet, 150 by 250 by 25 feet and 150 by 60 by 15 feet in depth.

Gold The gold was flat, smooth and bright coloured, with a few nuggets. Fines ranged from 74 to 78%.

Comments The valley at the mouth of Hunker had a very flat floor of considerable width. This allowed for a progressive mining plan in which cuts were used for the purpose of backfilling material and settling ponds. Each season, tailings were contoured, sides were sloped and topsoil was respread with the ponds being left for fish habitat and other recreational uses. This operation won the much-coveted Robert E. Leckie Award for Outstanding Placer Mining Reclamation Practices in November of 2001. The work performed included the reconstruction of the Hunker Creek Road, creek restoration and the reclamation of land disturbances (see page 20 for photo).

HUNKER CREEK 116B/3

Henry Gulch Placers	64°02'N 139°10'W
Water Licence: PM96-094	1998, 1999, 2000
Bonanza-Hunker Placer Area	**Site no. 24**

Operation/Location John Alton and Marty Knutson mined along the left limit of Hunker Creek, downstream from Henry Gulch, primarily in 1999. Some testing was done in 1998, and hydraulic monitoring was conducted in 2000, immediately downstream of Henry Gulch. During the mining of a single cut in 1999, four miners ran a single 12-hour shift.

Equipment/Function A Caterpillar D9H bulldozer and a Caterpillar 235 excavator were used to strip the cut in frozen ground. The pay was removed from the cut and stockpiled by a Caterpillar D350 truck, a Caterpillar 235 excavator and a Caterpillar 980B loader. The pay was sluiced back into the mine pit using the excavator and loader.

Wash Plant A single deck shaker plant was used. The pay gravels were classified through ¾-inch punch plate and then sluiced through two side runs. The two side runs had boil boxes before the hydraulic riffles and expanded metal sections. Nomad matting was used. An 8-inch by 6-inch Capria pump powered by a Duetz engine supplied the 1500 igpm needed to process 60 cubic yards per hour.

Ground Description The cut mined in 1999 was situated near the left limit of Hunker Creek. Between 12 and 18 feet of black mud was found above a layer of gravel, 8 to 10 feet deep. The bedrock was mostly black, solid and slabby. The lower 4 feet of gravel, and from 2 to 4 feet of the bedrock, were sluiced.

Mining Cuts A single cut measuring 180 feet by 140 feet by 30 feet was stripped, stockpiled and sluiced.

Water Supply and Treatment The pay gravels were removed from the pit and then the pit was used to sluice back into. Water from Hunker Creek was used for sluicing and the effluent was treated in the out-of-stream mine pit.

Gold The gold was reported to be mainly fine-grained with a fineness of 760.

HENRY GULCH 116B/3

Rick Gillespie	64°01'N 139°09'W
Water Licence: PM99-089	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 25**

Operation/Location During the 1998 season, Rick Gillespie ran a one-person mining operation on Henry Gulch, a left limit tributary to Hunker Creek. Stripping and thawing of frozen ground occurred between 1999 and 2002. Very little sluicing occurred within those years.

Equipment/Function One Caterpillar D8H bulldozer with ripper and angle blade was used for stripping frozen overburden and gravels. One Caterpillar 225 excavator was used to dig pay gravel and feed the wash plant, and a Caterpillar 966C loader was used to remove and stack tailings.

Wash Plant The wash plant consisted of a dump box which fed into a screen deck, 3 feet wide by 4 feet long, which classified down to 1¼ inch. A single sluice run was 25 feet long and had 1-inch riffles, 3½ feet wide, on Nomad mat in the top 12 feet section, followed by ¾-inch punch plate, 2 feet wide, on top of expanded metal over Nomad mat. A Gorman Rupp 4-inch water pump, powered by an electrical generator supplied water to process from 25 to 30 cubic yards per hour.

Ground Description A vegetative soil layer, about 2 feet deep, overlays up to 50 feet of frozen black muck containing silt and sand layers. All of this waste overburden had to be stockpiled uphill. The gravel layer at the bottom was 6 to 8 feet deep and all gravel, plus about 2 feet of bedrock, was sluiced.

Mining Cuts One small cut, approximately 1000 cubic yards, was sluiced in 1998. Between 1999 and 2002, stripping and thawing of overburden was carried out but very little sluicing was done.

Water Supply and Treatment Henry Gulch has a small watershed with limited water supply. Spring melt water and rain water were ditched to an out-of-stream recycle/settling pond which was cleaned out as needed.

Gold Course, angular gold with a few small nuggets and fineness around 680 was recovered.

HUNKER CREEK 116B/3

Wolreid WGR Mining Ltd.	64°01'N 139°08'W
Water Licence: PM99-018	2000
Bonanza-Hunker Placer Area	**Site no. 26**

Operation/Location Campbell Arkinstall and Tim Coles ran a four-person operation in 2000 along the left limit of Hunker Creek at the mouth of Dago Gulch.

Equipment/Function A Fiat-Allis HD41 bulldozer and a John Deere 890 excavator were used to strip overburden and dig pay gravel. A Leibherr 981 excavator was used to dig pay gravel and load a 50-ton Terex rock truck which hauled pay gravel to the wash plant. A Hough 120 loader was used to feed the wash plant.

Wash Plant A 40-foot long trommel, 6½ feet in diameter, classified material and fed oscillating sluice runs 16 feet wide. An 8-inch by 10-inch Paco water pump, powered by a Cummins 195 diesel engine which delivered about 2000 igpm, was used to process up to 120 cubic yards per hour.

Ground Description The valley bottom had been dredged in this area but some side pay remained along the left limit, with about 20 feet of thawed mud on top of 10 feet of frozen sand and mud, followed by 6 feet of coarse pay gravel. All bottom gravel, plus about 4 feet of decomposed bedrock, was sluiced.

Mining Cuts Three cuts were mined, each about 120 feet by 120 feet.

Historic Exploration's tunnel from the turn of the 20th century, on Hattie Gulch. There are several of these located on the property.

WATER SUPPLY AND TREATMENT Water was pumped from Hunker Creek and piped about 500 feet to the wash plant. Two out-of-stream settling ponds were used.

GOLD Gold was 90% fine with 10% larger than 12 mesh. Some dendritic gold was also recovered and fineness was around 720.

COMMENTS The site was reclaimed in September of 2000 and abandoned.

HATTIE GULCH 115O/14

Peter Gould	64°01'N 139°05'W
Water Licence: PM98-059	1999, 2002
Bonanza-Hunker Placer Area	**Site no. 27**

OPERATION/LOCATION Peter Gould operated on Hattie Gulch, a steep right limit tributary to lower Hunker Creek, in 1999 and 2002. No mining occurred in 2000 and 2001. Two people ran the operation in 1999 and three people worked in 2002.

EQUIPMENT/FUNCTION A Caterpillar D7F bulldozer was used to strip overburden, excavate and stockpile pay gravel and for settling pond construction and maintenance. A Caterpillar 930 loader was used to feed pay gravel into the wash plant and to remove and stack coarse tailings. Larger equipment was leased in 2002 for stripping the White Channel gravels.

WASH PLANT A hopper fed into a scrubber (trommel) 4 feet in diameter by 30 feet long. The 1-inch minus classified pay was sluiced in two 4-foot wide by 20-foot long oscillating runs. Nomad matting, expanded metal and some riffles lined the sluice runs. A Cornell 8-inch by 6-inch pump powered by a John Deere motor supplied the 1500 igpm needed for sluicing approximately 45 cubic yards per hour. An 8-inch by 6-inch pump supplied make-up water from Hunker Creek to the recycling ponds on Hattie Gulch when needed.

Campbell Arkinstall standing in a cut on Hunker Creek.

GROUND DESCRIPTION A thin layer of organic overburden was stripped from on top of a White Channel gravel deposit which varied, depending on location, from 20 feet to 100 feet deep. The bottom 10 feet of gravel, plus 1 or 2 feet of flat bedrock, were sluiced.

MINING CUTS Two cuts were mined in 1999 with approximately 11,000 cubic yards sluiced. Site preparation and stripping occurred in 2002, with only about 50 hours of sluicing.

WATER SUPPLY AND TREATMENT Make-up water was pumped from Hunker Creek and recycled in out-of-stream settling ponds located along the right limit of Hattie Gulch.

GOLD Most of the gold was reported to be fine-grained with a purity of 730 fine. Final clean-ups were done with a long tom and screens.

LAST CHANCE CREEK 116B/3

Wolreid WGR Mining Ltd.	64°01'N 139°07'W
Water Licence: PM95-090	1999, 2000
Bonanza-Hunker Placer Area	**Site no. 28**

OPERATION/LOCATION A cut was mined by Jake Jacobs along the right limit of Last Chance Creek near the mouth for the first part of 1999. Dave Brickner and Tim Coles ran an operation along the left limit of Last Chance Creek in the fall of 1999. Bob Cattermole continued mining the cut along the right limit in 2000. The operations were located approximately 2000 feet upstream from its confluence with Hunker Creek.

EQUIPMENT/FUNCTION Jake Jacobs used a 235 Caterpillar excavator and two smaller excavators as well as a D9H Caterpillar bulldozer for stripping and loading three 10-ton dump trucks which hauled the pay gravels to the wash plant. Tim Coles and Dave Brickner used a Terex 8250 bulldozer

Wolreid WGR Mining Ltd. on Last Chance Creek.

for stripping overburden and waste gravel. A John Deere 890 excavator was used for digging pay gravel and sluicing. A Leibherr 945 excavator was used to feed the wash plant. Bob Cattermole used a variety of equipment that included a D9G Caterpillar bulldozer, a 641 Caterpillar scraper, two 235 Caterpillar excavators, a 980C Caterpillar loader and a Fiat Allis HD41 bulldozer.

Wash Plant Tim Coles and Dave Brickner used a 5-foot by 11-foot oscillating deck screening plant which classified the pay gravels before being sluiced through two 8-foot wide by 12-foot long oscillating sluice runs. The sluice runs were lined with Monsanto matting and expanded metal. A 6-inch by 5-inch water pump, powered by a GMC 271 diesel engine, delivered 1500 igpm which was used to process up to 100 cubic yards per hour. Bob Cattermole used a wash plant with a grizzly, feeding into a hopper followed by a derocker. The classified gravels were sluiced through a 4-foot by 20-foot sluice run. A 10-inch Caterpillar pump supplied water for sluicing approximately 70 cubic yards per hour.

Ground Description Tim Coles/Dave Brickner: Up to 30 feet of washed White Channel gravel tailings from historic uphill operations was stripped from on top of about 2 feet of organic muck and 2 feet of gravel. All the ground was thawed. All the bottom gravels and about 4 feet of decomposed bedrock were sluiced. Bob Cattermole/Jake Jacobs: Up to 60 feet of both frozen and thawed material was excavated. The material removed was layered with silt and clay with rocks, bones and sticks found throughout. Several shafts from old workings were encountered.

Mining Cuts Jake Jacobs processed a single cut, 200 feet by 100 feet, in 1999. Tim Coles and Dave Brickner mined one cut about 300 feet by 100 feet in 1999. Bob Cattermole sluiced three cuts, 50 feet by 10 feet, in 2000.

Water Supply and Treatment Water was pumped from an in-stream reservoir in Last Chance Creek and was settled in an old mining cut from a previous operation.

Gold Gold found was mostly fines with only 2% larger than 12 mesh. The gold tended to be dull and nuggets often had quartz attached. The purity was reported as varying from 720 to 750 fine.

Comments Tim Coles and Dave Brickner reportedly found numerous copper nails that had become gold plated while lying in the ground.

LAST CHANCE CREEK 116B/3

Henry Gulch Placers	64°00'N 139°07'W
Water Licence: PM00-206	2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 29**

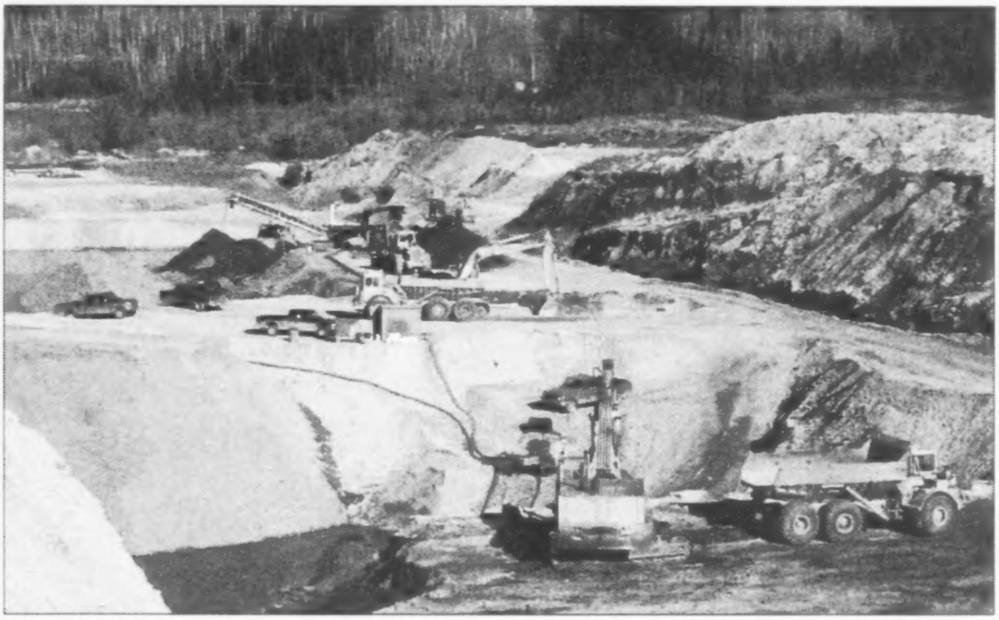
Operation/Location Marty Knutson and John Alton mined on Last Chance Creek, approximately 1500 feet upstream from the mouth, from 2000 through 2002. A crew of four miners ran a single 12-hour shift in 2000, and a crew of six miners ran a single 12-hour shift in 2001. A couple more employees were added in 2002. A left limit rim cut and a creek cut were mined in 2000. The operation mined through the 2001 and 2002 seasons along Last Chance Creek.

EQUIPMENT/FUNCTION A Caterpillar D9G and a D9H bulldozer, Caterpillar 225, 235 and 245 excavators, two Caterpillar D350 dump trucks, a Caterpillar 980B loader, and Caterpillar 621 and 631B scrapers were used at various times depending on what equipment was needed. Henry Gulch Placers operated at their largest scale in 2002. The bulldozers did preparation work for the scrapers, worked as pushcats for the scrapers and for clearing tailings. The 225 excavator was used for feeding the wash plant. The 235 excavator helped load pay gravels and dig drains. The 245 excavator was used primarily for digging and loading the pay gravels for sluicing. The D350 dump trucks were used for finishing the stripping and for hauling pay material to the wash plant. The scrapers were used for stripping and hauling overburden. The 980B loader was used for tailings and miscellaneous jobs.

WASH PLANT A two deck screening plant was used in 2000. The pay was classified to ½ inch minus before being sluiced through a sluice run 7 feet wide equipped with hydraulic riffles. The washed pay gravels were then run through three 4-foot wide oscillating sluice runs. Oversize gravels were stacked with a conveyor. A single deck screen plant was used in 2001 and 2002 which classified the pay gravels to ¾ inch minus before being sluiced in runs utilizing expanded metal and Nomad matting. Two boil boxes captured any coarse gold before being sluiced through a section of sluice run using 4 feet of hydraulic riffles and then expanded metal and Nomad matting. Oversize gravels were stacked with a conveyor. An 8-inch by 10-inch Fairbanks-Morris pump powered by a 371 G.M. engine supplied the 2000 igpm needed to process approximately 70 cubic yards per hour in 2000, and up to 115 cubic yards in 2001 and 2002.

GROUND DESCRIPTION A left limit rim cut of Last Chance Creek was mined during the first part of 2000. The cut had a thin band of White Channel gravel overlying decomposed bedrock. All of the gravels and 1 foot of bedrock was mined on the rim cut. The creek ground mined for the last part of 2000 consisted of between 20 and 30 feet of old hydraulic White Channel gravels that had been washed off the rim overlying 15 feet of black mud and 6 feet of gravels. The creek cuts mined during 2001 varied considerably, with between 30 and 50 feet of hydraulic White Channel tailings overlaying 8 to 20 feet of black mud and from 3 to 7 feet of gravel. The ground increased to a maximum depth of 70 feet in 2002, primarily due to the increased depth of historic White Channel gravels. The creek cuts processed between 3 and 5 feet of the lower gravel and from 2 to 6 feet of bedrock. The large oldtimer tailing dumps were sluiced as they proved to be economic when encountered.

MINING CUTS An area 600 feet long by 300 feet wide by 2½ feet deep was sluiced on the rim in 2000. The cut along Last Chance Creek mined in 2000 measured 400 feet by 150 feet by approximately 40 feet deep. Three cuts (302 by 323 by 40 feet deep/250 by 300 by 50 feet deep/140 by 130 by 52 feet deep) on Last Chance Creek were stripped and sluiced during 2001. Four cuts (250 by 200 by 50 feet deep/125 by 100 by 50 feet deep/375 by 130 by 65 feet deep/475 by 300 by 70 feet deep) were mined on Last Chance Creek working in an upstream direction.



Henry Gulch Placers on Last Chance Creek.

WATER SUPPLY AND TREATMENT An out-of-stream flow-by pond was used to provide water for sluicing in 2000 on the left limit rim of Last Chance Creek. Two 100 by 150 by 12-foot deep out-of-stream settling ponds provided effluent treatment. A recycle system back to the creek was used for the first part of 2001, with settling occurring in an old mine pit along the right limit of Last Chance Creek. After the first cut was processed on Last Chance Creek, the mine pits were used for a full recycle system for the remainder of 2001 and through 2002.

GOLD The gold recovered was reported to be primarily flat and fine with 96% -14 mesh. The purity was 735 fine. Mercury was recovered in areas and was common in oldtimers' tailings. Jigs and wheels were used for the final clean-up.

COMMENTS The dredge limits were located through the work done in 2001. Good gold values were located on bedrock.

LAST CHANCE CREEK 116B/03

Northway Mining & Exploration Inc.	64°00'N 139°06'W
Water Licence: PM95-091	1998, 1999
Bonanza-Hunker Placer Area	**Site no. 30**

OPERATION/LOCATION This operation worked on Preido Hill which is located on the right limit of Last Chance Creek at its confluence with Hunker Creek. In 1998, the operation employed 5½ miners covering two 12-hour shifts per day. In 1999, the crew was reduced to 2½ miners covering one 12-hour shift per day.

EQUIPMENT/FUNCTION The equipment used to mine this property included a Caterpillar D9L bulldozer, a Caterpillar 988B loader, a Caterpillar 245 excavator and two D550 Caterpillar rock trucks. The bulldozer was equipped with a 16-foot by 7.66-foot blade and a ripper. The loader had a 9-yard bucket and was used to remove tailings. The rock trucks were 6 wheel drive and were used to haul pay to the plant and to move overburden. In 1999, only one of the rock trucks was used. The excavator served various functions.

WASH PLANT The wash plant consisted of a 5½-foot by 40-foot trommel, screening to ¾ inch, which was fed by a 12-foot by 15-foot hopper. Recovery was accomplished using 12-foot by 13-foot oscillating sluice runs with Nomad mats. The plant processed approximately 140 loose yards per hour. Water for the plant was provided at a rate of 1200 igpm using a 10- by 8-inch Paco pump powered by a 471 General Motors engine. A jig was used to clean up concentrates.

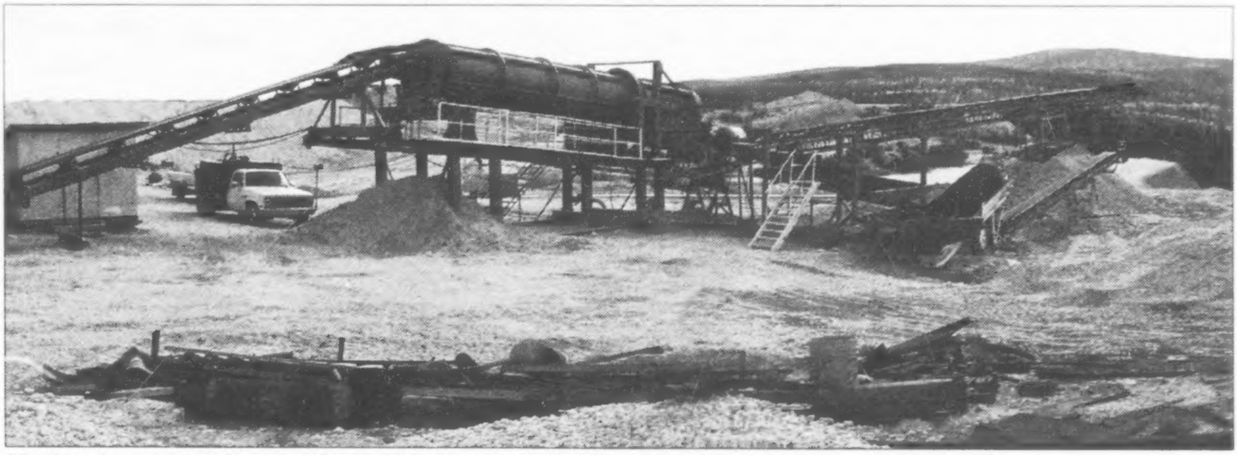
GROUND DESCRIPTION The maximum total depth of this ground was 60 feet. The average depth was 30 feet and the ground was thawed. The top 10 to 20 feet was a red coloured gravel over a layer of White Channel gravel which went down to bedrock. Bedrock in this area was described as wavy and decomposed. The sluice section was 12 feet deep.

MINING CUTS In 1998, two cuts were mined on Preido Hill. In 1999, three cuts were put in. They were 200 by 66 by 10 feet, 80 by 25 by 7 feet and 75 by 25 by 6.6 feet.

WATER SUPPLY AND TREATMENT Water for this operation was obtained from Last Chance Creek. It was pumped up to the hill and conveyed via an old ditch to two ponds. This operation accomplished 100% recycling of water. Water was pumped to the hill as needed to compensate for evaporation and some seepage from the ponds. The ponds on the hill were 400 feet by 150 feet and 200 feet by 200 feet.

GOLD The gold recovered from this site had a fineness of 815. It was reported as being crystalline with a bright colour. Ninety percent screened to less than 12 mesh. There were a few nuggets.

COMMENTS One old shaft and a drift about 100 feet long were found in the bench gravel.



Northway's wash plant located on Preido Hill, Last Chance Creek.

LAST CHANCE CREEK 115O/14G,116B/03A

Favron Enterprises Ltd.	64°00'N 139°06'W
Water Licence: PM97-056	1998, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 31**

OPERATION/LOCATION The Favrons began preparations to start mining at this location late in 1998. Mining did not commence until 2000. The site is located approximately 1 kilometre up Last Chance Creek from its confluence with Hunker Creek. This area has been mined off and on since the Klondike gold rush. To date, this operation has worked in the centre valley bottom where the valley width is approximately 400 feet. The camp and other mining related buildings have been located up on the left limit bench of Last Chance. The Favron's operation employed five miners and three camp staff including the owners. They operated on a single 10-hour shift per day in 2000. The shift length increased to 12 hours per day in 2001. The crew increased to six miners in 2002.

EQUIPMENT/FUNCTION A Caterpillar D9L bulldozer equipped with a U-blade and ripper was used for stripping. An 8250 Terex bulldozer with a straight blade was used to push material to the scrapers. Two TS24B Terex scrapers were used to strip and to haul pay dirt. Two Bucyrus Erie 350 excavators were used at the site. One, which was equipped with a 2½-yard bucket, was used to load thawed clay into the scrapers. The other, equipped with a 4-yard cleanup bucket, was used for cleaning bedrock. An 82-30B Terex bulldozer with a U-blade was used to level dumping areas. In the 2001 mining season, the D9L and the TS24 scrapers remained in use at the site. The Bucyrus Erie 350 excavator with the 2½-yard bucket was used to establish drains or channels and to finish a bank cut. The 82-30B bulldozer was used to feed the wash plant. An FD50 Fiat Allis bulldozer with a U-blade and ripper was used for stripping. In 2002, the excavator was changed to a model 750 Hitachi and the wash plant was fed by a model UH-14 Hitachi.

WASH PLANT The wash plant used in 2001 was the one normally used at the Favron's Dominion Creek operation. It had a variable speed 42-inch by 21-foot belt feeder that fed to a 42-inch by 60-foot elevation conveyor. The conveyor fed to a 5-foot by 10-foot double screen deck with 1½-inch and ¾-inch screens. The plus ¾ inch material travelled out a 36-inch by 35-foot radial stacking conveyor. The minus ¾-inch material flowed down two 12-inch hoses to two 9-foot by 12-foot slick plates, which channelled material into six 36-inch by 16-foot runs equipped with expanded metal with Nomad matting for 16 feet and an additional section 2-foot by 4-foot 1-inch equipped with 1-inch riffles over Nomad matting. The expanded metal sections were set at a slope of 1½ inches to the foot. The riffle-equipped sections were set at a slope of 2 inches to the foot. There were three of the runs on each side of the plant. Water was supplied using a Berkley 12 by 10-inch pump powered by a 6V-71 Detroit Diesel engine at a rate of 2500 igpm. The process rate was 130 loose yards per hour. In 2001, when material left the wash plant it was run through a second trommel which was 5 feet in diameter and 30 feet long. The second plant was necessary in order to get a thorough wash due to the presence of gumbo bedrock.

The trommel used by Favron Enterprises for their operation on Last Chance Creek in 2002.

In 2002, the wash plant used was a 6-foot 2-inch diameter by 30-foot long trommel with grouser bars spaced at ⅝ inch. Recovery was accomplished in three 3-foot by 8-foot long runs that fed into five 18-foot long runs with a total width of 16 feet. The first three runs were equipped with 1-inch angle riffles over Nomad matting. The lower four runs were equipped with expanded metal over Nomad matting. The pump used in 2002 was a 10 by 12-inch Peerless powered by a Caterpillar D333 engine. It provided approximately 2000 igpm of water, which was used to process 100 loose yards of material per hour.

GROUND DESCRIPTION In 2000 and 2001, the miners encountered up to 40 feet of black muck which was covered with White Channel material from previous miners' operations on the adjacent benches. On average, there were 20 feet of black muck over 5 feet of gravel of uniform size, in mostly thawed ground. Bedrock was made up of cubes and clay. In 2002, there was more coarse material encountered than in previous seasons.

MINING CUTS An area 900 feet long by 300 feet wide was stripped in 2000. No material was sluiced in 2000. In 2001, 5 feet of gravel and 4 feet of bedrock were sluiced. In 2002, a total of 10 feet of material was sluiced.

WATER SUPPLY AND TREATMENT Water was acquired from Last Chance Creek through a gravity ditch. Settling ponds were located out-of-stream. Approximately 90% of process water was recycled. The pond was 450 feet by 300 feet by 10 feet deep. In 2002, the pond size was 300 feet by 300 feet by 4 to 5 feet deep. The ponds were created by excavating and stockpiling pay gravels from a cut. The cut was then filled with water and used as a recycle pond.

GOLD The gold recovered from this site had a purity of 710 to 720 fine. A few nice coarser pieces were recovered in 2002. Some dendritic material was also recovered. The colour was a dull yellow.

COMMENTS Some of the black muck overburden stripped from the mine pit was spread over tailings from old hydraulic stripping operations. The vegetation in these areas is expected to improve quickly as a result.

DISCOVERY PUP ON LAST CHANCE CREEK 115O/14G

Peter Erickson, Lee Bolster	63°59'N 139°07'W
Water Licence: PM95-043	1998, 1999, 2000
Bonanza-Hunker Placer Area	**Site no. 32**

OPERATION/LOCATION Discovery Pup is a steep narrow tributary to Last Chance Creek. In his last year of mining at the site in 1998, Pete Erickson reprocessed some ground he had previously mined above the Last Chance Creek access road. In 1999, Lee Bolster worked at the site, putting in a cut downstream from the road. There was no mining activity at the site after 1999 other than site reclamation that was done by Favron Enterprises Ltd. in 2000.

EQUIPMENT/FUNCTION In 1998, a D8 Caterpillar bulldozer with a ripper was used for stripping overburden and a D6 Caterpillar bulldozer was used for sluicing. In 1999, Lee Bolster used two Caterpillar bulldozers, models D8 and D6, and a Caterpillar 225 excavator with a ¾-yard bucket.

WASH PLANT This operator used either a 30-foot trommel or a standard sluice box depending on the material being processed. The trommel included a 15-foot scrubbing section and a 15-foot screen. The sluice run fitted on the trommel was 12 feet long and from 3 to 5 feet wide and was fitted with punch plate and expanded metal. It was a single run box. Water was supplied at a rate of 1000 igpm using a Worthington 8-inch by 6-inch pump powered by a 4-53 General Motors engine. The process rate was 60 loose yards per hour.

GROUND DESCRIPTION The stratigraphic section in Discovery Pup is 30 to 40 feet of frozen black muck on bedrock. The bedrock varied from hard to soft gumbo clay. Last Chance valley at the mouth of Discovery Pup had overburden that was shallow in places and full of oldtimers' logs. The depth of the cut mined in 1999 by Lee Bolster was 15 feet, in a previously mined area. The sluice section typically averaged 3 feet in depth.

MINING CUTS In 1999, Lee Bolster's cut was 100 feet by 100 feet in area.

WATER SUPPLY AND TREATMENT Water for the operation was obtained from an in-stream pump pond on Last Chance Creek and delivered by pipeline 300 to 400 feet up Discovery Pup to the sluicing operation. Waste was treated in an out-of-stream pond on the left limit of Last Chance Creek prior to discharging to the pump pond. This allowed an estimated 50% recycle rate. The cut mined at the mouth of Discovery Pup recycled process water in a pond adjacent to the sluice set-up.

GOLD The purity of the gold on this creek was from 690 to 700 fine.

LAST CHANCE CREEK 115O/14G

Dietmar Gritzka and Last Chance Placers	63°59'N 139°07'W
Water Licence: PM01-251	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 33**

OPERATION/LOCATION Dietmar Gritzka started mining on claims 5 and 6 Above Discovery in 1998. These claims are located at the mouth of 5 Above Pup which is a left limit tributary to Last Chance Creek. In the first two years, all

Last Chance Placers operating on 5 Above Pup in 2002.

earth moving was done by Mr. Gritzka working on a part-time basis. Starting in the fall of the 2000 mining season, Last Chance Placers Ltd. took over the project with Mr. Gritzka working for them in 2001. In 2001 and 2002, the crew consisted of 3 miners who worked 10 to 10½ hours per day.

EQUIPMENT/FUNCTION In 1998 and 1999, two Caterpillar bulldozers, models D8K and D9H, both equipped with a ripper and a U-blade, and a Poclain excavator with a ¾ cubic yard bucket were used to strip overburden. In 2000, a D9G Caterpillar bulldozer was used to rip and push overburden, pay and tailings. A Caterpillar 235 excavator was used to strip frozen muck and feed the plant. In the fall of 2001 and part of March and April of 2002, an Hitachi twin engine excavator with a 7-yard bucket and two Terex 55-ton rock trucks were contracted from Max Fuerstner to strip muck overburden that was too wet to strip using conventional methods. After the trucks and the Hitachi excavator left the site, the 235 Caterpillar excavator and the D9 and D8 Caterpillar bulldozers were used. All 3 machines ripped frost. The 235 cast material to the bulldozers, which ramped the muck out of the cut.

WASH PLANT The wash plant consisted of a 5-foot by 11-foot single deck oscillating screen deck with ¾-inch punch plate. Undersize material flowed to a static 4-foot by 6-foot tray with 1-inch angle iron riffles over Nomad matting, then to two 4-foot by 8-foot oscillating trays with large expanded metal over Nomad matting. The screen deck was modified from a Clinton Creek asbestos screener. The pump used was an 8 by 6-inch Allis Chalmers, powered by a 6-cylinder John Deere diesel engine. The plant processed 80 to 100 loose yards of material per hour using 2000 igpm of water. In 2002, the process rate slowed down to 60 to 80 loose yards per hour due to the gummy nature of the material.

GROUND DESCRIPTION In 1998 and 1999, Mr. Gritzka started stripping material that was mostly thawed and dry with some sections of partially frozen black muck in preparation for future mining. Based on drilling performed by a previous owner, Mr. Gritzka was anticipating that there would be up to 50 feet of muck to remove. The stratigraphic section encountered in 2000 consisted of 5 feet of thawed muck over 1 foot of gravel and cobbles on cube-shaped bedrock. The cut mined in 2000 was at the mouth of 5 Above Pup. The sluice section was 1 foot of gravel and 5 feet of bedrock. The cut mined in 2001 was further upstream in 5 Above Pup. The ground consisted of 4 feet of thawed muck directly over blocky bedrock. The sluice section was 5 feet of bedrock. In 2002, there were 35 feet of muck over 5 feet of gravel on bedrock. The top half of the material was thawed and wet while the bottom was lightly frozen. The operation sluiced 5 feet of material. The area had been heavily worked by oldtimers. The cut floor had been 85% worked out. The bedrock in this area was slate. Although gold didn't go more than 1 foot into bedrock, 3 feet were sluiced.

MINING CUTS No sluicing was performed in 1998 or 1999. One cut was mined in 2000. The cut was 400 feet long by 180 feet wide by 11 feet deep. In 2001, the cut mined was 400 feet long by 90 feet wide by 9 feet deep. In 2002, the cut was 275 feet by 400 feet and had an average depth of 35 feet.

WATER SUPPLY AND TREATMENT Process water was recirculated at a rate of approximately 75% using a 200-foot by 200-foot pond. Additional water was pumped from Last Chance Creek. No water was provided by 5 Above Pup. In 2002, Last Chance Creek was used as a conduit to transfer sluice effluent to two settling ponds located 1000 feet downstream on the left limit of the creek. Water was recirculated from the ponds back up to the sluice plant with overflows discharging into Last Chance Creek. During freshet and high water event, Last Chance Creek did not flow through the settling ponds but was turned back into its primary channel.

GOLD The gold was described as rough with some dendritic pieces. It had a purity of 680 to 690 fine.

LAST CHANCE CREEK AND TRIBUTARIES 115O/14G

Last Chance Placer Ltd.	63°59'N 139°07'W
Water Licence: PM97-052	1998, 1999, 2000, 2001
Bonanza-Hunker Placer Area	**Site no. 34**

OPERATION/LOCATION Lee Olynyk and his crew mined on 15 Above Pup and 8 Above Pup, which are left limit tributaries to Last Chance Creek. The cut widths on the tributaries were constrained by the width of the valleys. There were three miners who worked 10 to 10½ hours per day. In 2002, Last Chance Placers concentrated their efforts on 5 Above Pup under Dietmar Gritzka's water use licence PM 01-251.

Last Chance Placers on Last Chance Creek in August 2000. 5 Above Pup is in the foreground and 8 Above Pup is in the background.

Equipment/Function In 1998 and 1999, a Caterpillar 235 excavator was used to rip and strip frozen black muck overburden and feed the sluice plant. A Caterpillar D9G and a Caterpillar D8H bulldozer were used to rip and strip overburden, push pay to the plant and push tailings away. In 2000, a D9G Caterpillar bulldozer was used to rip and push overburden, pay and tailings. A Caterpillar 235 excavator was used to strip frozen muck and feed the plant. Hydraulic monitors were used on both 8 Above Pup and 15 Above Pup to remove some of the frozen muck, with effluent being settled in old cuts in the Last Chance Creek valley. In 2001, the D9G, the D8H and the 235 were used.

Wash Plant The wash plant consisted of a 5-foot by 11-foot single deck oscillating screen deck with ¾-inch punch plate. Undersize material flowed to a static 4-foot by 6-foot tray with 1-inch angle iron riffles over Nomad matting, then to two 4-foot by 8-foot oscillating trays with large expanded metal over Nomad matting. The screen deck was modified from a Clinton Creek asbestos screener. The pump used was a 6 by 5-inch Cornell pump, powered by a 6-cylinder Mitsubishi engine. The plant processed 100 loose yards of material per hour.

Ground Description In 1998 and 1999, the stratigraphic sections were the same on both 8 Above Pup and 15 Above Pup. In 1998, the miners encountered 45 feet of frozen black muck overlying 3 feet of angular, poorly sorted cobbles and gravel on bedrock. The sluice section was 3 feet of gravel and 4 feet of bedrock on both pups. In 1999, there was 40 feet of frozen black muck over 3 feet of cobbles and gravel in each pup. The sluice section was the same as in 1998. In 2000, there was no mining on 15 Above Pup. The miners removed 30 feet of frozen muck to reach the 2 feet of gravel and cobbles and 5 feet of fractured bedrock which were sluiced on 8 Above Pup. In 2001, 25 feet of frozen muck covered the 1-foot depth of cobbles and 5 feet of fractured bedrock which were sluiced on 8 Above Pup. The cut mined on 15 Above Pup had 35 feet of frozen black muck over 3 feet of angular cobbles on bedrock. The sluice section on 15 Above Pup was 3 feet of cobbles and 5 feet of bedrock.

Mining Cuts The cut mined in 1998 on 15 Above Pup was 700 feet long by 95 feet wide. The 8 Above Pup cut was 230 feet long by 100 feet wide. The cuts mined in 1999 were 300 feet by 90 feet on 15 Above Pup and 400 feet by 100 feet on 8 Above Pup. In 2000, the cut on 8 Above Pup was 700 feet long by 40 feet wide. In 2001, the 8 Above Pup cut was 700 feet long by 30 feet wide, while the 15 Above Pup cut was 450 feet long by 90 feet wide.

Water Supply and Treatment On 8 Above Pup, in 1998 and 1999, water was pumped using an 8 by 6-inch pump, powered by 6-cylinder John Deere diesel engine, from a pond on the left limit of Last Chance Creek below the mouth of 8 Above Pup. In 1998, the pond was 50 feet by 90 feet. In 1999, the pond was 500 feet by 80 feet and there was no recycling of process water. In 2000 and 2001, a Cornell pump was used to pump 2000 igpm of water at this location. Process water was recycled at a rate of approximately 75% using a 400-foot by 200-foot pond.

On 15 Above Pup two pumps were employed in series to move 2000 igpm of water upstream from Last Chance Creek. The pipeline started at 12 inches in diameter and went down to 10 inches then 8 inches over a distance of 1 kilometre, raising the water approximately 600 feet. An 8 by 5-inch Cornell pump, powered by a 6-cylinder Mitsubishi engine, pumped from the return pond. An 8 by 6-inch high pressure pump, powered by a 6-cylinder John Deere diesel engine, boosted the water to the cut. Very little water was contributed by 15 Above Pup. In 1998, the recycle rate with a 60-foot by 100-foot pond was approximately 70%. In 1999, the recycle rate with a 400-foot by 60-foot pond was 50%. In 2001, the recycle pond was 300 feet by 100 feet and the recycle rate was 75%.

Gold The purity of the gold from 15 Above Pup varied from 670 to 680 fine. The purity of the gold from 8 Above Pup varied from 680 to 690 fine. 15 Above Pup gold was described as angular and dendritic in form, while 8 Above Pup gold was described as smooth and dendritic. Fifty percent of the gold was +20 mesh in size.

HUNKER CREEK 116B/3

Tamarack Inc.	64°00'N 139°05'W
Water Licence: PM95-053	1998
Bonanza-Hunker Placer Area	**Site no. 35**

Operation/Location Tamarack Inc. continued to operate a large-scale mine on Paradise Hill, a left limit bench of Hunker Creek upstream of 80 Pup through the 1998 season. A crew of 13 miners and two camp staff ran the mine. The mining at this location was put in temporary closure after 1998 and part of the operation was moved to the Indian River in 1999.

Tamarack Inc. on Hunker Creek.

Equipment/Function The property was stripped and sluiced using a fleet of five Caterpillar D9 bulldozers and eight Caterpillar scrapers. Two Caterpillar 966 loaders and miscellaneous other equipment was also available when needed. A mobile auger drill has been widely used for proving pay values on this property.

Wash Plant A 90-cubic-yard hopper, with a 4-foot by 16-foot apron feed, fed pay gravel onto a variable speed conveyor 4 feet wide by 60 feet long. The conveyor fed a trommel 8 feet in diameter by 60 feet long. The last 6 feet of the trommel classified pay to ¾-inch minus. The classified pay ran down a 2-foot wide by 45-foot long chute to a distributer that divided the slurry into six oscillating runs 3 feet wide by 20 feet long. Expanded metal and Nomad matting lined the runs. An 10-inch by 10-inch Crane Demming pump, powered by a Caterpillar D398 engine, lifted the water 350 feet up onto Paradise Hill for sluicing. Approximately 3000 igpm was needed to process approximately 300 cubic yards of gravel per hour.

Ground Description Paradise Hill is a large White Channel deposit. The ground varied in depth from 120 feet to 140 feet. Domes and depressions in the bedrock have continued to provide great variation in the overall depth. A layer of overburden 80 feet deep was found overlying 10 feet of mud and an average of 40 feet of gravel. All of the gravel was sluiced.

Mining Cuts Four cuts were mined throughout the 1998 season. They measured approximately 900 feet by 300 feet, 1200 feet by 180 feet, 300 feet by 200 feet and 150 feet by 80 feet.

Water Supply and Treatment Water for sluicing was pumped from an in-stream reservoir on Hunker Creek up onto Paradise Hill for sluicing. The pay gravels were sluiced over the rim into an out-of-stream settling complex which is located along the left limit of Hunker Creek. The treated effluent re-enters Hunker Creek by both direct and seepage discharge above the pump pond, and is then largely recycled.

Gold The gold was reported to be primarily fine-grained and rough. The purity was 830 fine.

HUNKER/HESTER CREEKS 115O/14

Emile Levesque (Big Red Mining)	63°58'N 139°00'W
Water Licence: PM96-037	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 36**

Operation/Location Emile Levesque continued mining in the general area of Hester Creek, a left limit tributary of Hunker Creek. In 1998, the mining was done on Paradise Hill and on the right limit side pay of Hester Creek. A cut on Hester Creek was mined in the spring of 1999 before moving up onto Nugget Hill to sluice the rim gravels. Old tailings and sections of virgin gravels were processed on Nugget Hill throughout 2000 and most of 2001. A section of Hester Creek that had been partially stripped previously was mined in the fall of 2001. Due to a lack of water on Nugget Hill from the Independence Creek gravity ditch, the operation

Emile Levesque on Hester and Hunker creeks.

was moved to the mouth of Independence Creek in 2002. Emile Levesque and a single employee usually worked a single shift 12 to 14 hours per day.

EQUIPMENT/FUNCTION A Caterpillar D6 bulldozer, a Caterpillar 950 loader, a Caterpillar 966 loader and a 260 Bantam excavator were used in 1998 and 1999. The 966 loader was sold and was not used in 2000 and 2001. The loaders were used to feed the sluice plant and for hauling pay gravels. The excavator was used to feed the sluice plant on Nugget Hill and for scraping the cut face and maintenance of drains. The bulldozer was used to scrape the cut faces and for various small jobs.

WASH PLANT The wash plant consisted of a dump box leading into a 5-foot wide by 11-foot long shaker screen outfitted with 1¼-inch punch plate. The 1¼-inch minus classified gravels were then sluiced through a 16-foot long single run which tapered from 33 inches down to 24 inches before being distributed onto three oscillating sluice runs 4 feet wide by 8 feet long. The upper single run was lined with 2-inch angle iron riffles. Matting was not used except for a small section below the shaker plant which was found to capture a good percentage of the gold. The oscillating runs were lined with expanded metal and Nomad Matting. A 6-inch by 8-inch Morris pump, powered by a Caterpillar 3306 engine or a 360 Cummings engine, supplied the estimated 2500 igpm needed to process 150 cubic yards per hour on Hester Creek and Paradise Hill. When sluicing tailings on Nugget Hill the production was increased to 200 cubic yards per hour.

GROUND DESCRIPTION The ground on Hester Creek varied in depth from 40 feet deep on the right limit to over 50 feet deep in the centre of the creek. Approximately 32 to 40 feet of black muck overlies 8 feet of gravel. Bedrock tended to be solid and hard. All of the gravel was sluiced. The sluicing on Paradise Hill was restricted to washing the remaining gravels and oldtimer's tailings along the rim. There was approximately 3 feet to 6 feet of White Channel gravels on top of decomposed graphite bedrock. All of the gravels, and up to 2 feet of the bedrock, were sluiced. The rim of Nugget Hill was sluiced in the fall of 1999. As on Paradise Hill, the rim was found to range from 3 feet to 6 feet deep with decomposed bedrock. All the White Channel gravel, and up to 2 feet of the decomposed bedrock, was sluiced.

MINING CUTS A large cut (approximately 700 feet long by 50 feet wide by 40 feet deep) along the right limit of Hester Creek was monitored in 1998 and 1999. Approximately 45,000 cubic yards were sluiced on Nugget Hill in the fall of 1999. Tailings from several locations on Nugget Hill were processed throughout 2000 and part of 2001. Approximately 30,000 cubic yards were processed from Hester Creek in the fall of 2001. An area at the mouth, along the right limit of Independence Creek, was bulk tested, and a cut was processed along the left limit of Independence Creek in 2002. Due to poor results, the operation was shut down on Independence Creek prior to the end of the season.

WATER SUPPLY AND TREATMENT Water for sluicing and monitoring on Hester Creek and Paradise Hill came from an out-of-stream reservoir near the mouth of Hester Creek. Make-up water was brought in from Hunker Creek when needed. The final effluent treatment occurred in large out-of-stream settling ponds in the Hunker Creek valley or in the pump pond. When sluicing on Nugget Hill the water was pumped from a ditch beside Hunker Creek up onto Nugget Hill. The effluent was carried over the rim to the large out-of-stream reservoir used for sluicing on Hester Creek. No visible discharge could be seen. Sluice water at Independence Creek came from a large reservoir created by the mining done by Tony Kosuta over the last several years. A drain to old dredge tailings provided the effluent treatment.

GOLD The gold varied a great deal depending on where it was mined. Gold from Hester Creek tended to be fine and ranged from an average purity of 650 fine to a high of 760 fine. The gold on Paradise Hill and Nugget Hill had a higher purity with an average of 820 fine. Nuggets up to 1 ounce were found on Nugget Hill.

HUNKER/HESTER CREEK 115O/14

The Nugget Factory Inc.	63°58'N 139°04'W
Water Licence: PM00-209	2001, 2002
Bonanza-Hunker Placer Area	**Site no. 37**

OPERATION/LOCATION The Nugget Factory ran an operation at the mouth of an unnamed tributary along the left limit of Hester Creek in 2001. The late Mr. Tony Fritz had previously mined at this location. Michel Filion of The Nugget Factory Inc. concluded an agreement with Emile Levesque in 2002 to mine under Mr. Levesque's licence on 12 of the placer claims which the company was purchasing. The operation then relocated to Hester Creek. The company worked the ground from July to September when it shut down due to poor gold recovery.

EQUIPMENT/FUNCTION A D9G Caterpillar bulldozer along with a D6C Caterpillar bulldozer were employed at this site stripping cuts and various other duties. A Linkbelt 120 Loader and a Caterpillar 966F excavator were also used to build settling facilities and feed the sluice plant.

WASH PLANT The mobile wash plant was a 4 by 10-foot long oscillating screen deck covering pulsating riffles. A lever lifts the riffles and screen deck upward for the purpose of clean-ups. A 6 by 6-inch Gorman Rupp trash pump, powered by a four cylinder John Deere diesel engine, capable of 1800 igpm processed about 60 cubic yards per hour. Jigs were used for final clean-ups.

The Nugget Factory, Hester Creek.

GROUND DESCRIPTION The ground descriptions for Hester and Hunker creeks can be found under Mr. Levesque's licence (site no. 36).

MINING CUTS The operator did not supply the number of the mine cuts made in time to be included in this publication.

WATER SUPPLY AND TREATMENT Out-of-stream settling facilities were used at both locations, with no discharge at the lower Hester Creek site. Old cuts of Gary Crawford's at the mouth of Hester Creek were used. Water for sluicing came from an out-of-stream reservoir near the mouth of Hester Creek, with make-up water being pumped from Hunker Creek. Final effluent treatment occurred in large settling ponds on Hunker Creek.

GOLD While no information was supplied from the operator other than poor recovery, the gold from Hester Creek is known to be small-particled, shiny in colour and has a fineness of 680.

INDEPENDENCE CREEK 115O/14

Peter Gould	63°58'N 139°02'W
Water Licence: PM95-062	1998
Bonanza-Hunker Placer Area	**Site no. 38**

OPERATION/LOCATION Peter Gould and one employee mined on Nugget Hill, a left limit bench of Hunker Creek between Independence Creek and Hester Creek in 1998. The operation was moved to Hattie Gulch the following season.

EQUIPMENT/FUNCTION A Caterpillar D7F bulldozer was used for stripping overburden and gravel, stockpiling pay gravel, and maintaining settling ponds. A Caterpillar 930 loader was used to feed pay gravel into the wash plant and for removing tailings.

WASH PLANT A hopper fed into a scrubber (trommel) 4 feet in diameter by 30 feet long. The 1-inch minus classified pay was sluiced in two 4-foot wide by 20-foot long oscillating runs. Nomad matting, expanded metal and some riffles lined the sluice runs. A Cornell 8-inch by 6-inch pump powered by a John Deere motor supplied the 1500 igpm needed for sluicing approximately 45 cubic yards per hour.

GROUND DESCRIPTION The bench gravel deposit was approximately 30 feet deep with only a thin organic layer on top. All of the gravel and about 1 foot of decomposed bedrock was sluiced.

MINING CUTS One small cut was mined on Nugget Hill in the same area that has been mined since 1995. Total yardage sluiced in 1998 decreased due to major equipment breakdowns.

WATER SUPPLY AND TREATMENT Water from Independence Creek was brought to Nugget Hill by a 2-mile long gravity ditch to a series of recycle ponds. No discharge except by seepage occurred.

GOLD The gold was reported to be rough with the majority in the 16 mesh size. The purity ranged from 850 to 910 fine. Clean-ups were done with a long tom and screens.

COMMENTS The ditch from Independence Creek to Nugget Hill was built by Peter Gould's grandfather, Robert Gould, in 1907. Peter's father, John Gould, also mined this ground for many years. The property was sold after the 1998 season.

INDEPENDENCE CREEK 115O/14

Anton Kosuta	63°59'N 139°02'W
Water Licence: PM99-098	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 39**

OPERATION/LOCATION From 1998 through 2002, Tony Kosuta continued to operate a small-scale operation near the mouth of Independence Creek, a left limit tributary of Hunker Creek. Tony Kosuta ran the mine by himself most of the time.

Anton Kosuta, Independence Creek.

EQUIPMENT/FUNCTION A Caterpillar D5B bulldozer, a Caterpillar D6 bulldozer, a Caterpillar 941 track loader and a Caterpillar 930 loader were all used during the mining of this property. The D5B bulldozer and 941 track loader were used for most of the stripping and for clearing tailings. The 930 loader was used for feeding the box, and tailings work as well. When larger jobs were required they were contracted out.

WASH PLANT An 8-foot wide by 14-foot long dump box tapers down to a 3-foot wide by 24-foot long single sluice run. The dump box and sluice run is lined with Nomad matting and angle iron riffles. A Paco 10 by 8-inch pump, powered by a Caterpillar D330 engine, supplied the estimated 2000 igpm needed to process between 15 and 30 cubic yards per hour.

GROUND DESCRIPTION As mining progressed upstream on Independence Creek the overall depth decreased. The ground averaged 18 feet deep throughout 1998 and into 2000 with 10 feet of frozen black muck overlying 8 feet of gravel. In 2001, the depth decreased to 12 feet with muck/gravel along with boulders on the bedrock. All of the gravels and a small amount of the bedrock were sluiced. The ground mined in 2002 averaged 16 feet deep. Bedrock was solid and hard.

MINING CUTS A cut measuring 150 feet long by 70 feet wide by 25 feet deep, and a cut measuring 30 feet long by 15 feet wide by 18 feet deep were mined in 1998 and 1999. Mining continued upstream on Independence Creek at a similar rate throughout 2000 and 2001 with one cut mined each year. A cut approximately 40 feet long by 35 feet wide was sluiced in 2002.

WATER SUPPLY AND TREATMENT An in-stream reservoir was constructed on Independence Creek and the water was piped to the sluice plant with a gravity system. Water was also available to be recycled from the settling facility constructed in the old mine pit at the mouth of Independence Creek. An additional settling area was being constructed in 2001 utilizing an area of old dredge tailings.

GOLD The gold was reported to be mainly flat and fine. A few small nuggets were recovered. The purity of the gold was approximately 775 fine.

HUNKER CREEK 115O/15

Graham and Geoffrey Jacobs	63°59'N 139°00'W
Water Licence: PM01-233	2002
Bonanza-Hunker Placer Area	**Site no. 40**

OPERATION/LOCATION Geoffrey Jacobs operated on a right limit bench of Hunker Creek between Bee Gulch and Trilby Creek through the 2002 season. Two miners and one camp person operated a single 12-hour shift.

EQUIPMENT/FUNCTION A Caterpillar D9H bulldozer was used for stripping overburden, pushing up the pay gravels, and reclamation. A Kobelco 907 excavator was used to feed the wash plant and an Hitachi UH07 excavator removed tailings and helped in the stripping operations.

WASH PLANT A wash plant obtained from Clinton Creek was used. Pay gravels were loaded into a hopper which fed into a 5-foot by 10-foot oscillating screen deck that classified the gravels to -¾ inch. The classified pay gravels then passed over four boil boxes before being washed through 2-foot by 8-foot sluice runs equipped with hydraulic riffles. The oversize material was carried off and stacked by a 40-foot long conveyor. A 3-inch by 4-inch Indeng pump, powered by a 120 hp engine, pumped water from Hunker Creek up onto the bench when make-up water was needed. A 6-inch by 6-inch Ajax pump supplied water to the wash plant for sluicing approximately 80 cubic yards per hour.

GROUND DESCRIPTION The mining was done on a south-facing exposed bench of Hunker Creek. All of the ground was thawed. An average of 2 feet of soil overlays between 4 and 8 feet of gravel, followed by 6 to 8 feet of soil and then more gravel (up to 6 feet deep) until bedrock. Bedrock tended to be decomposed. The overall depth varied from 6 feet on the rim to as much as 35 feet at the back of the cut. The lower 3 to 6 feet of gravel and the first foot of bedrock were sluiced.

MINING CUTS A total of five cuts were prepared and sluiced during 2002. Two of the cuts were 450 feet by 90 feet and three of the cuts were 150 feet by 90 feet.

WATER SUPPLY AND TREATMENT A full recycle operation was set up on the bench. Make-up water was pumped from an in-stream reservoir on Hunker Creek up into a series of ponds on the bench. The sluice water was treated on the bench and make-up water was only pumped when required. No direct discharge back to Hunker Creek occurred.

Sluice plant on Hunker Creek.

GOLD The gold was reported to be very fine-grained and flat. The purity was 815 fine.

COMMENTS The equipment was moved onto the property in the fall of 2001. The operation mined through the entire 2002 season. The operation was shut down and the reclamation was started in the fall of 2002 due to poor results.

HUNKER CREEK 115O/15

David Gould	63°58'N 139°00'W
Water Licence: PM01-237/PM01-245	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 41**

OPERATION/LOCATION David Gould and Ian Thomas mined as partners on Hunker Creek at the mouth of Colorado Creek in 2000 and 2001 and just downstream of Not Much Gold Creek in 1998, 1999 and 2002. A small cut was mined and some testing was done by Paul O'Brien and Gordon Watson on the claims just downstream of Indepedence Creek in 2002. Due to poor results at that location the site was reclaimed and abandoned.

EQUIPMENT/FUNCTION A Caterpillar D9 bulldozer was used for stripping overburden and dredge tailings, and for excavating pay gravel. A Caterpillar 950B loader was used to haul pay gravel from the mine pit to the wash plant. A Komatsu PC220 excavator was used to dig pay gravel and to feed the wash plant.

WASH PLANT A hopper fed the pay gravel into a 5-foot diameter by 15-foot long trommel outfitted with ½-inch screen. The classified pay gravels were washed through sluice runs 10 feet wide by approximately 5 feet long. The first 29 inches were outfitted with hydraulic riffles and the remainder of the run used expanded metal and Nomad matting. The oversize material was stacked with a 28-foot long by 3-foot wide conveyor. A Gorman Rupp 6-inch water pump, powered by a Deutz engine, supplied the 700 igpm needed to process between 25 and 60 cubic yards per hour.

GROUND DESCRIPTION In 1998, 1999 and 2002, the area being mined (Not Much Gold Creek area) had been previously dredged, which left up to 10 feet of coarse tailings on top of 8 feet of sandy gravel and then 12 feet of mud and silt on the bottom. Below this was mostly decomposed bedrock with a few patches of gravel which were missed by the dredge. This bottom gravel plus 2 or 3 feet of bedrock were processed. In 2000 and 2001, the area mined (Colorado Creek area) was not previously mined with heavy equipment and consisted of 20 to 25 feet of organic mud and sand on top of a gravel layer about 5 feet deep. The bottom 3 feet of gravel, plus about 2 feet of bedrock, were sluiced.

David Gould on Hunker Creek.

MINING CUTS In 1998, approximately 3500 square yards of bedrock were mined. In 1999, about 3000 square yards of bedrock were mined in three cuts. In 2000, about 3500 square yards of bedrock were mined and in 2001, two cuts were mined with a total of about 2300 square yards of bedrock mined.

WATER SUPPLY AND TREATMENT Mining cuts were excavated below the water table and had to be pumped out while pay gravels were being excavated and stockpiled for sluicing. After the pay gravels were removed, the pits were allowed to flood and then were used for recycling with no direct discharge to Hunker Creek. Back filling of the cuts occurred as the pay gravels were sluiced back into the cut.

GOLD Most of the gold was reported to be fine, flat and smooth. The purity of the gold was 820 fine.

HUNKER CREEK 115O/15

Jack and Ian Fraser	63°58'N 138°58'W
Water Licence: PM96-066	1998
Bonanza-Hunker Placer Area	**Site no. 42**

OPERATION/LOCATION This operation downsized considerably. Only Jack and Ian Fraser performed some work in 1998, with Ian Fraser's sons, Douglas and Joey, pinch-hitting on occasion. The work area in 1998 was located on the left limit of Hunker Creek approximately a quarter of a mile upstream from the tributary Not Much Gold. Sluicing of stockpiled material and mining a small cut was the only activity for this last season.

EQUIPMENT/FUNCTION The Caterpillar 225 excavator was used to strip and feed the sluice plant. A 950 Caterpillar loader hauled material away from cut. A D8H Caterpillar bulldozer was employed in various functions including reclamation.

Jack and Ian Fraser on Hunker Creek.

WASH PLANT The wash plant in use at this time was a 14 by 5-foot double deck screening unit which classified the pay to 9-inch minus, after which it was fed into an 8 by 22-foot long sluice box divided into four runs. One and one-quarter-inch angle iron riffles were installed in the first 4 feet of the runs. Heavy expanded metal lined the next 12 feet, followed by 6 feet of the original 1¼-inch riffles. The sluice runs were lined for their entire length with Nomad matting. Water for sluicing was supplied by an 8 by 6-inch Monarch pump, powered by a 671 Cummings diesel engine, capable of 1500 igpm, which processed about 40 cubic yards per hour.

GROUND DESCRIPTION This old dredge tailings site revealed coarse tailings 6 feet below creek level. Dredge slickings were encountered 21 feet down. The ground then turned to mud for the next 10 feet before bedrock was located. The cut mined along the left limit averaged from 4 to 20 feet deep. Moving downstream towards the settling ponds, the operators lost too much grade and found too much mud to be able to continue. The Frasers sluiced the bottom 5 feet of gravel and 2 feet of the soft unconsolidated schist typical of this area. Gravels were uniform in size with no large rocks.

MINING CUTS Approximately 5,000 cubic yards were processed through the wash plant. A small cut 130 by 25 by 15 feet deep was mined on the side hill.

WATER SUPPLY AND TREATMENT Out-of-stream pump ponds were created from old mining cuts on Hunker Creek to supply the wash plant. Effluent was treated in out-of-stream settling ponds with no discharge to the creek.

GOLD Gold recovered at this site had a fineness of 800 to 810. Most of the particle size was smaller than 10 mesh minus. No coarse nuggets were recovered.

COMMENTS Reclamation of some of the new workings was performed with the Caterpillar D8H in combination with the Caterpillar 225 excavator, working the stockpiled overburden into the contoured tailings. It was noted by the operator that older workings were already revegetating from work done five or six years previously.

GOLD BOTTOM CREEK 115O/15

Mogul Gold Placers Ltd.	63°57'N 138°58'W
Water Licence: PM98-025	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 43**

OPERATION/LOCATION In 1998, David Millar of Mogul Gold Placers Ltd. mined the lower right limit of Gold Bottom Creek. Paul O'Brien and Gordon Watson of Colonial Gold (see Colonial Gold) started operating under this licence as well in 1999. A joint venture was formed to test claims on the left limit of Hunker Creek approximately 1 kilometre above the mouth at Gold Bottom Creek. David Millar continued to sluice stockpiled materials on Gold Bottom proper and to mine the right limit of Gold Bottom opposite Soda Pup.

EQUIPMENT/FUNCTION In 1998, Mogul Gold used two D8H Caterpillar bulldozers and a Koehring 666 excavator. David Millar continued his right limit stripping operation, using a monitor to thaw the frozen black muck, and by 2002 was using an EX200 Hitachi excavator and a 966C Caterpillar loader as well.

WASH PLANT Mogul Gold used a 6-inch pump in 1998, which was upgraded to a 10 by 8 pump, powered by an 871 Jimmy engine, capable of pumping 2500 igpm. In 2002, this was replaced by a Gordon Rupp 6-inch pump, powered by a 4 cylinder Lister engine, capable of 1000 igpm and approximately 50 cubic yards were processed per hour. Sluicing was accomplished with a 5-foot trommel which had a 30-foot tailings stacker, a 10-foot wide oscillating run with 4 feet of hydraulic riffles and 4 feet of expanded metal. For the 1999 test program on Hunker Creek, a 3-foot rotary trommel and a Ross box were used. A 6 by 6 WAI pump, powered by a Detroit diesel engine pumping 300 igpm was employed for this sluicing venture, processing 30 yards per hour. Final cleanups were processed with a wheel and a long tom.

GROUND DESCRIPTION The Hunker Creek area was dredged in the past. It was tested in the hope of finding any gravels or bedrock that might have been missed. Fifteen to 25 feet of frozen black muck overlay about 3 feet of gravels intermixed with overburden which was sluiced. The right limit face of Gold Bottom Creek opposite Soda Pup was moved back about 20 feet and the overburden encountered ranged from 15 to 35 feet deep by the end of 2002.

MINING CUTS In 1998, Mogul Gold mined an area 300 by 100 feet. A 30 by 80-foot test cut was excavated and sluiced on the Hunker Creek test area in 1999. On the 1 A/M claim at Hunker and Gold Bottom, a further cut, 500 by 40 by 23 feet, was excavated in 2001. A total of approximately 20,847 cubic yards were sluiced in a second joint venture with Colonial Gold. Mogul Gold monitored and stripped an area 250 feet long by 20 feet by 35 feet deep at the same time upstream. By 2002, two more cuts were taken out totalling about 300 by 100 feet.

WATER SUPPLY AND TREATMENT Water was acquired from Gold Bottom Creek, Soda or Hunker Creek and returned through a series of settling ponds and ditches. Both out-of-stream and in-stream settling ponds were used, averaging in size from about 150 to 200 feet long by 100 feet wide. The creek was diverted to the right limit or left limit channel as required. An out-of-stream settling pond was constructed on Hunker Creek for test sluice purposes.

GOLD Little gold was recovered from the Hunker Creek site. It was generally dull, fine-grained and no nuggets. The gold assayed out at about 820. On Gold Bottom, the gold was small and flat with very few nuggets and a fineness of 785. Over 50% of the gold was -30 mesh with very few nuggets.

COMMENTS Reclamation of the Hunker Creek test area included contouring, sloping and creek channel stabilization. As mining may not be finished here a small settling pond has been left in place. The 1 A/M claim at the mouth of Gold Bottom has been completely reclaimed.

ONTARIO GULCH 115O/15

Pay Streak Placers	63°57'N 138°58'W
Water Licence: PM01-229	1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 44**

OPERATION/LOCATION Richard Semple and Byron Bottle began testing this property in 1999. In 2001, a water licence was obtained since results of the drilling were promising. There is no camp set up as the location is only 45 minutes out of Dawson City.

EQUIPMENT/FUNCTION Testing in 1999 was accomplished using a 6-inch Augur drill. In 2000, the operators acquired a 1¼-inch Hitachi Hammer drill and using it in combination with Gel dynamite, blasted 2-foot rounds down to bedrock. A 6 by 12-foot long tom was used to test gravels. A D9G Caterpillar bulldozer with a U-blade and a 931 Caterpillar loader with a ¼-yard bucket were brought on-site in 2001 for stripping and feeding the sluice plant.

WASH PLANT A 3 by 6-foot shaker box with ¾-inch punch plate and a 2- by 8-foot sluice run equipped with 1¼-inch riffles was moved onto the property for the 2002 season. The pump is yet to be acquired as no sluicing was done in 2002.

GROUND DESCRIPTION The stratigraphy of this area is composed of 12 to 16 feet of moss and black muck, intermixed with an old forest layer about 1¼ feet thick. A 4 to 6-foot angular gulch gravel layer contains some large quartz boulders. Bedrock is blocky, composed of green muscovite, feldspar and quartz schist. The ground is largely permafrost.

MINING CUTS Due to a delay in the water licence process, the operators were unable to strip until late fall. An area 60 by 100 feet and approximately 6 feet deep was opened up to thaw and a start made on the bedrock drain. The bedrock drain and additional stripping was done in 2002, covering an area 1125 feet long by 75 feet wide and 4 feet deep.

WATER SUPPLY AND TREATMENT Construction of settling ponds will be done in 2003. Water will be pumped into a reservoir for sluicing purposes and settled out prior to its return to Gold Bottom Creek. As Ontario Gulch is fairly narrow, the operator has been licenced for in-stream works including a cross-valley dam if required. Cleanups will be done with a two-cell pulsating jig.

GOLD Coarse gold was recovered during testing, but until mining actually begins, the average particle size, quality and fineness will not be known.

COMMENTS The operators uncovered a few old shafts and three old drift portals on the bench in upper Ontario Gulch.

GOLD BOTTOM CREEK 115O/15

Colonial Gold Joint Ventures	63°57'N 138°58'W
Water Licence: PM98-025	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 45**

OPERATION/LOCATION Paul O'Brien and Gordon Watson of Colonial Gold started operating under this licence in 1999. A joint venture was formed to test claims on the left limit of Hunker Creek approximately 1 kilometre above the mouth at Gold Bottom Creek. During the same season, Colonial Gold set up an operation upstream on Gold Bottom Creek, employing four miners and running two 12-hour shifts. Due to the proximity of this operation to town, a camp was not set up. In 2000, Colonial Gold increased to five miners but ran only one 12-hour shift. By 2001, Colonial Gold had moved about 3 to 4 kilometres upstream on Gold Bottom and also mined the 1 A/M claim in another joint venture with Mr. Millar at the confluence of Hunker Creek and Gold Bottom Creek. Colonial Gold wound down this operation in 2002 and is seeking other ground for future mining.

EQUIPMENT/FUNCTION In 1999, Colonial Gold moved onto the site their equipment, which included one EX200 Hitachi

Colonial Gold's operation on Gold Bottom Creek.

excavator to strip and tail out, and a second one to feed the plant. Intermittently, two D8 Caterpillar bulldozers were used to strip the ground. To perform the test work on Hunker Creek, a Caterpillar front-end loader was employed. In 2000, they increased equipment to 3 Hitachi EX200 excavators and a leased D9 Caterpillar, using the D9 and and excavator to strip, a second excavator to tail out and the third excavator to feed the plant. 2001 saw a reduction in equipment to the two excavators and a 980 Caterpillar loader. In 2002, equipment was a Caterpillar D8K bulldozer leased for stripping and the two EX200 Hitachi excavators which also stripped material and loaded the plant. The Caterpillar 980 loader continued to be used in the recovery of pay gravels.

Wash Plant Colonial Gold used a 5-foot rotary trommel with a 40-foot stacker and hydraulic riffles. The pump was a Cornell 6 by 6 inch, powered by a Perkins 6/354 diesel, capable of pumping 600 igpm. Approximately 75 cubic yards were processed per hour. For the test program on Hunker Creek, a 3-foot rotary trommel and a Ross box were used. A 6 by 6 WAI pump, powered by a Detroit diesel engine, pumping 300 igpm was employed for this sluicing venture, processing 30 cubic yards per hour. Jigs were used for the final clean-ups.

Ground Description The Hunker Creek area was dredged in the past. It was tested in the hope of finding bedrock or gravels that might have been missed. Twenty to 30 feet of material composed mostly of gravels intermixed with overburden was sluiced. The side pay on Gold Bottom mined by Colonial Gold in 1999 had very little frozen ground and only minimal overburden. In 2000, as they continued to mine upstream, they encountered anywhere from 6 to 30 feet of black muck covering 3 feet of gravel. In 2001, the upstream mine site had approximately 25 feet of black muck over 10 feet of gravel, whereas the area mined at the mouth on Hunker revealed 20 feet of black muck over 3 feet of gravel. The mining cut in 2002 showed an increase in the black muck level to an average of 45 feet (anywhere from 38 to 54 feet) overlaying from 2 to 8 feet of gravels.

Mining Cuts A 30- by 80-foot test cut was excavated and sluiced on the Hunker Creek test area. In 1999 and 2000, Colonial Gold moved about 300,000 cubic yards of material. In 2001, three more cuts were made. The upstream cut was approximately 500 by 60 by 35 feet deep. A second cut measured 600 by 60 by 35 feet in depth, and on the 1 A/M claim at Hunker and Gold Bottom, a further cut 500 by 40 by 23 feet was excavated. A total of approximately 20,847 cubic yards were sluiced. The cut in 2002 was 900 by 120 feet, out of which an average 3 feet of gravels and unconsolidated bedrock was sluiced.

Water Supply and Treatment Water was acquired from Gold Bottom Creek and returned through a series of settling ponds and ditches. The creek was switched from the left limit to the right limit channel as required. An out-of-stream settling pond was constructed on Hunker Creek for test sluice purposes.

Gold Little gold was recovered from the Hunker Creek site. It was generally dull, fine-grained and no nuggets, assaying out at about 820. On Gold Bottom, the gold was small and flat with very few nuggets and a fineness of 785.

Comments Colonial Gold noted that the only thing consistent about placer gold recovery in Gold Bottom Creek was its inconsistency. As to the test cut on Hunker Creek, the scarcity of gold recovered was a tribute to the efficiency of the dredges. In addition, it was the first time Mr. O'Brien and Mr. Watson had encountered an area where the oldtimers had steamed their way down. Large sections of the area mined had literally been "steam-cleaned" which considerably reduced the profit from the operation.

GOLD BOTTOM CREEK 115O/15

Alfredo Aimola	63°54'N 138°58'W
Water Licence: PM98-013	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 46**

Operation/Location Alfredo and Sergio Aimola began mining the hillsides of Gold Bottom Creek and Gold Bottom Gulch in 1998, running one 10-hour shift per day. In 2000, this operation downsized to just Alfredo Aimola. Mr. Aimola also mined some of the intervening claims owned by Don Donis downstream of Soap Creek by agreement in 2001.

Equipment/Function A Caterpillar D8K bulldozer with a U-blade and ripper, 235 excavator and a 988 loader were used to strip the hillsides to allow thawing of permafrost. The 235 excavator and a monitor were used to clear away the black muck which was stockpiled for reclamation. Pay dirt was pushed up with the D8K which was delivered to the sluice plant via the 988 loader. An additional Caterpillar 980C wheeled loader with a 5½-yard bucket was employed in 2002.

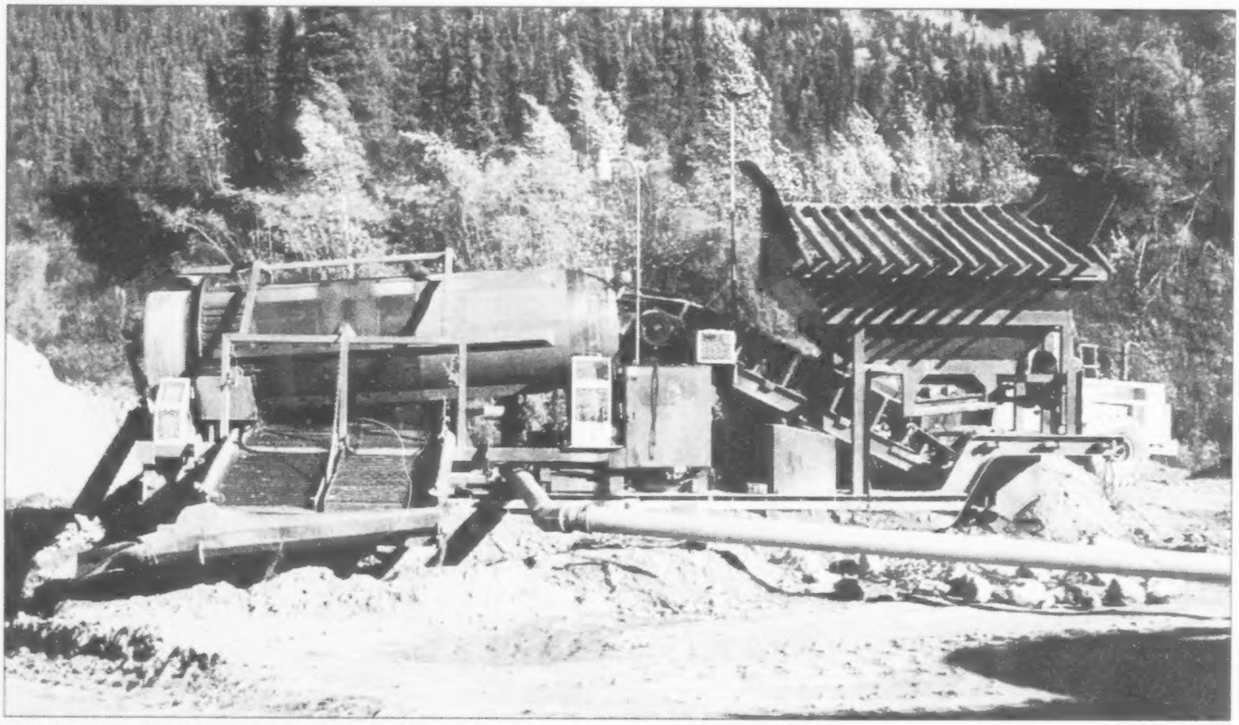
WASH PLANT A dump box equipped with a shuffle board and conveyor belt was used to feed material to a trommel, classified to ⅜ inch. The pay was then sluiced through two 4- by 8- and one 2- by 8-foot sluice runs with 1-inch riffles, lined with heavy Nomad matting. A Worthington 12 by 10-inch pump, powered by a Jimmy diesel engine, with 1800 igpm capability processed approximately 70 to 90 cubic yards per hour. Long toms and wheels were used for final cleanups. In 2002, a Caterpillar 12 by 10-inch pump powered by a 4 cylinder engine replaced the Worthington.

GROUND DESCRIPTION In 1998, the ground mined was composed of approximately 20 feet of frozen black muck, 7 to 8 feet of average-sized gravels and 2 to 3 feet of unconsolidated flat bedrock. Subsequent mining revealed an increased overburden layer of 35 to 40 feet in depth, with 16 feet of frozen gravels and 1 foot of wavy bedrock. Pay was located below the water course. Evidence of old shafts and bones were found in the waste section. Soap Creek was consistent with Gold Bottom Creek as far as the stratigraphic section. Approximately 4 feet of gravel and 1 foot of bedrock were sluiced. In 2002, Mr. Aimola returned to an area below camp where the overburden was only 6 feet in depth and there was a layer of gravel 15 feet thick, all of which was sluiced.

MINING CUTS One large cut 50 by 600 feet and one small cut 40 by 50 feet were mined in 1998 at Gold Bottom Gulch. In 1999, two cuts 100 by 500 and one cut 40 by 500 feet were mined and about 24000 cubic yards were sluiced. A cut 200 by 100 by 10 feet was monitored and sluiced in 2000 on the Melanie One claim. The operation was moved upstream to the confluence of Gold Bottom Creek and Soap Creek towards the end of season. Using a small test plant, a cut 100 by 30 by 10 feet of pay was mined. This area was completed in 2001 and an agreement struck with adjoining claim owner, Don Donis, to mine a portion of his ground and settle in an old cut. An area 70 by 120 by 40 feet was mined and sluiced. In 2002, a 60-foot wide by an average of 650 feet long cut was completed.

WATER SUPPLY AND TREATMENT Water for monitoring and sluicing was obtained from Gold Bottom Creek, Gold Bottom Gulch, Soap Creek and an unnamed left limit tributary, depending on location of the mine cut. This operator was licenced for in-stream settling ponds which were constructed as needed and decommissioned after mining was completed. In 2002, a more permanent settling facility was constructed downstream on Gold Bottom measuring about 200 by 500 feet.

GOLD The gold recovered varied in size and shape from flat to round, smooth to chunky. All of the gold was a bright, shiny colour and relatively rough in shape. Nuggets were recovered which tended to be round in shape and attached



Alfredo Aimola's sluice plant on Gold Bottom Creek.

to quartz, from ½ ounce to an ounce in size. Colouring was bright with a mesh size of 30% at +10, 50% at -10 and 20% at +60. Fineness averaged 780. In 2001, the gold found at Soap Creek was much coarser and one nugget weighed out at 40 grams. The operator noted that in 2002, when he was mining both sides of Gold Bottom that the right limit appeared to contain the coarser gold.

HUNKER CREEK	115O/15
Max Lanzinger	63°57'N 138°54'W
Water Licence: PM98-016	1998, 1999, 2000, 2001
Bonanza-Hunker Placer Area	**Site no. 47**

OPERATION/LOCATION Max Lanzinger mined along the right limit of Hunker Creek next to Whiskey Hill just downstream from Six Below Pup from 1998 to 2000. The operation was moved onto Whiskey Hill in 2001. Max Lanzinger operated by himself in 1998 and for most of 1999. Dave Brickner worked as a partner in 2000 and 2001.

EQUIPMENT/FUNCTION A John Deere 644 loader was used to dig pay gravel, feed the wash plant and remove tailings. In 1999, a Caterpillar 950 loader was added and in 2000 a Komatsu 400 excavator was used to dig gravel. In 2001, a Terex 8240 bulldozer was used for reclamation work and odd jobs.

WASH PLANT During 1998 and 1999, a 12-foot by 8-foot dump box fed a home-made shaker plant with a 6-foot by 8-foot screen deck which classified the pay gravels to -1¼ inch. The classified material was washed through a single sluice run 20 feet long by 4 feet wide. Expanded metal over astro turf lined the first 5 feet. The last 15 feet of sluice run used 1¼-inch angle iron riffles over astro turf. A 6-inch Gorman-Rupp pump powered by a 3 cylinder Jimmy provided approximately 800 igpm which was used to process between 60 and 80 cubic yards per hour. Dave Brickner's wash plant was used in 2000 and 2001. Pay gravels were dumped into a dump box 4 feet wide by 16 feet long which fed onto a shaker deck 5 feet wide by 12 feet long that classified to -¾ inch. The classified pay gravels were first washed through a single sluice run 30 inches wide by 6 feet long lined with expanded metal over astro turf. The single run was followed by a double deck of oscillating sluice runs 8 feet by 8 feet with half the feed going to the bottom run. The double deck sluice runs were lined with expanded metal riffles over astro turf. An 18-inch wide by 30-foot long conveyor belt was used to remove and stack over-size tailings. A 6-inch by 5-inch high pressure water pump, powered by a Caterpillar 471 diesel engine, delivered about 900 igpm which was used to process from 100 to 150 cubic yards per hour.

Max Lanzinger on Hunker Creek.

GROUND DESCRIPTION Overburden varied from one location to another within the valley bottom and included old dredge tailings, washed tailings from hillside workings and bulldozer tailings from more recent operators. Depending on location the depths varied from 15 feet up to 25 feet. Below the old tailings were areas of virgin ground with 5 feet of frozen muck and 5 or 6 feet of pay gravel. Some of the tailings from the previous operations as well as all bottom gravels were sluiced. Whiskey Hill had previously been extensively hand mined and consisted of large quartz boulders on top of decomposed bedrock. All the gravels in the ditches between the valley bottom and Whiskey Hill were sluiced. Only the surface of the bedrock was sluiced on Whiskey Hill.

MINING CUTS In 1998, one cut approximately 100 feet long by 50 feet wide by 15 feet deep was mined. In 1999, a cut approximately 150 feet long by 80 feet wide by 25 feet deep was processed. In 2000, two cuts were mined, the first was about 100 feet long by 30 feet wide by 8 feet deep and the second was about 150 feet long by 75 feet wide by 38 feet deep. During 2001, the historic drains off Whiskey Hill were cleaned out and sluiced before relocating onto the Whiskey Hill rim. An area approximately 500 feet by 500 feet was sluiced but it was determined that the oldtimers had mined virtually all of the gold. Some testing was done before the operation was abandoned on Whiskey Hill.

WATER SUPPLY AND TREATMENT Water was pumped from Hunker Creek and settled in out-of-stream ponds. In 1999, 2000 and 2001, the water was recycled from the out-of-stream settling pond.

GOLD In 1998 and 1999, the gold recovered included approximately 40% rough nuggets to a maximum of ¾ ounce.

In 2000 and 2001, less than 5% nuggets were found. The purity varied from 837 to 840 fine.

Comments A mammoth tusk was found in 1999. Most of the washed tailings from 1998 through 2000 were used to build a new section of the Hunker Creek road in the valley bottom.

HUNKER CREEK 115O/15

John Erickson	63°57'N 138°53'W
Water Licence: PM97-066	1998
Bonanza-Hunker Placer Area	**Site no. 48**

Operation/Location John and Sharon Erickson mined on Hunker Creek through 1998 in the Mint Gulch area. Most of the mining was done along the left limit on side pay. Grew Creek Ventures Ltd. took over the mining on this property in 1999 and John Erickson worked for them in 1999, 2000 and 2001.

Equipment/Function A Caterpillar D8 bulldozer was used for stripping and stockpiling pay gravels for sluicing. A Caterpillar 966 loader was used for feeding the sluice plant, handling tailings and other miscellaneous jobs. Most of the side pay was stripped using monitors to thaw the black muck.

Wash Plant A 12-foot by 9-foot dump box fed into a conventional single sluice run approximately 32 feet long. Angle iron riffles and Nomad matting was used in the sluice run. A 10-inch by 12-inch Dayton pump powered by a Caterpillar engine supplied the 2000 igpm needed to process approximately 50 cubic yards per hour.

Ground Description Most of the ground mined was along the left limit of Hunker Creek. An average of 25 feet of frozen black muck overlies a layer of gravel 6 feet thick. Bedrock typically is solid and rises away from the creek. The overburden was washed away with monitors and all the remaining gravels and a small amount of the bedrock were sluiced.

John Erickson on Hunker Creek. Monitor being used to thaw black muck to expose side pay.

Mining Cuts A single cut measuring 250 feet long by 100 feet wide by 25 feet deep was mined in 1998. Mining activity during 1999, 2000 and 2001 is documented in the Grew Creek Ventures Ltd. summary.

Water Supply and Treatment Water was pumped directly from a reservoir in Hunker Creek to the sluice box or to the monitors. The water was then treated in out-of-stream settling ponds before being discharged back to Hunker Creek. Recycling of water was often necessary.

Gold The gold recovered was reported to be primarily fine with a lot of black sand. The purity was 830 fine.

HUNKER CREEK AND MINT GULCH 115O/15

Grew Creek Ventures Ltd.	63°57'N 138°54'W
Water Licence: PM97-066/PM00-198	1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 49**

Operation/Location Dave Marsters moved onto this property and began mining in 1999. The mining started on Hunker Creek at the mouth of Rogers Gulch and then worked upstream on Hunker Creek. The mining was done on Hunker Creek in 1999 and 2000 and then was moved to the mouth of Mint Gulch for 2001. A crew of four miners ran a single 12-hour shift.

Equipment/Function A Caterpillar D8L bulldozer and a Caterpillar 235 excavator were used for stripping and ditching. A Caterpillar 966E loader was used to feed the sluice plant and for handling tailings. A Caterpillar D9G bulldozer was used in 2000 for stripping and reclamation work.

Wash Plant A hopper feeding into a 5-foot wide by 8-foot long shuffle plate shaker deck classified the pay gravels to 1½-inch minus before passing over a boil box and then being sluiced through a single sluice run. The 5-foot wide by 10-foot long sluice run was lined with alternating sections of hydraulic riffles and expanded metal. A 6-inch Gorman Rupp pump, powered by an electric engine, supplied the 1800 igpm needed to process approximately 100 cubic yards per hour.

Ground Description The Hunker claims varied in depth depending on whether side pay was being mined. An average of 10 to 15 feet of frozen black muck covers 10 feet of sand and from 4 to 6 feet of gravel. The bedrock was typically decomposed. The ground on Mint Gulch varied in depth

Grew Creek Ventures on Mint Gulch, Hunker Creek.

with 6 to 40 feet of frozen black muck overlying 3 feet of gravel. The bedrock was usually solid and slabby. All of the gravels, and from 2 to 4 feet of the bedrock, were sluiced.

MINING CUTS Five cuts (150 by 500 feet by 50 by 450 feet by 200 by 400 feet by 50 by 50 feet by 30 by 200 feet) on Hunker Creek were mined in 1999. Three cuts (300 by 40 feet by 350 by 60 feet by 275 by 25 feet) were sluiced in 2000 on Hunker Creek. A narrow cut approximately 2500 feet long was sluiced on Mint Gulch in 2001.

WATER SUPPLY AND TREATMENT Water was recycled in an out-of-stream settling pond/recycle pond system in 1999. Due to the higher rainfall in 2000, a recycle set-up was not required. Water was pumped from an in-stream reservoir to the sluice plant and then was settled in an out-of-stream location. Due to the narrow valley and steep gradient on Mint Gulch, the pay was hauled to the mouth of Mint Gulch and sluiced, using Hunker Creek water and out-of-stream settling in old mine pits along Hunker Creek.

GOLD The gold from Hunker Creek was reported to be both smooth and rough with a purity of 834 fine. Most of the gold from Mint Gulch was rough with a purity of 835 fine. Numerous nuggets up to 4 ounces were found.

COMMENTS Dave Marsters received the Robert E. Leckie Award for Outstanding Placer Mining Reclamation Practices in 2000 for his reclamation of 1.2 kilometres of Hunker Creek.

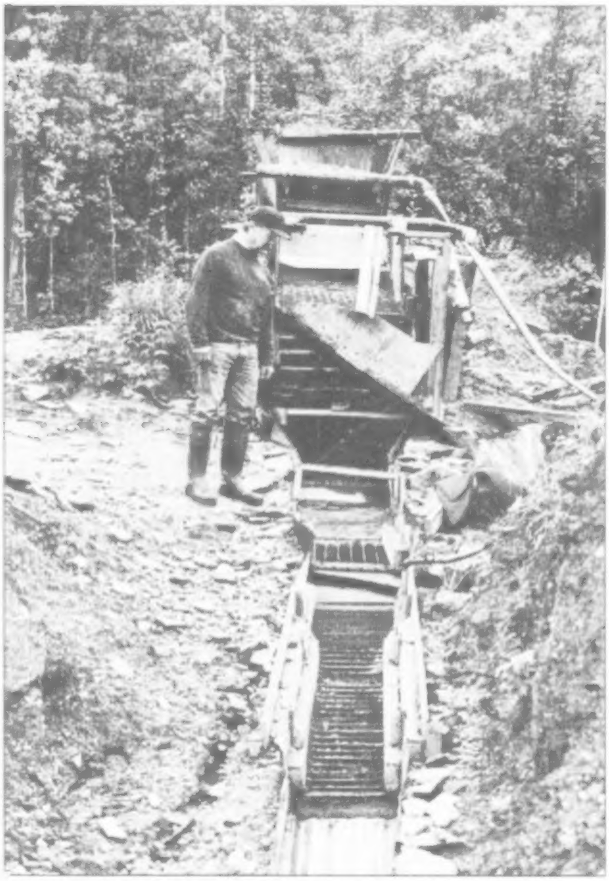
24 PUP/RIGHT FORK HUNKER CREEK 115O/15

Gerald and Elizabeth Ahnert	63°53'N 138°56'W
Water Licence: PM00-178	1998, 1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 50**

OPERATION/LOCATION Gerald and Elizabeth Ahnert continued mining by themselves in a downstream direction on 24 Pup, a steep left limit tributary of Right Fork Hunker Creek, from 1998 to 2001. The mining was moved upstream for the 2002 season to where the Ahnert's started hand mining on 24 Pup, 20 years ago. This is a small-scale operation that has followed a narrow meandering pay channel.

EQUIPMENT/FUNCTION A 1969 John Deere 400 rubber tired loader/backhoe was used for stripping, stockpiling pay, feeding the sluice plant and levelling tailings.

WASH PLANT A 3-foot by 8-foot wet screen shaker was used to classify the pay gravels to 2-inch minus. The classified material was washed in a single sluice run. The sluice run was lined with 1-inch high by ½-inch wide Hungarian riffles over expanded metal and Nomad matting from 1998 to 2000. A section of hydraulic riffles was added in 2001.



Gerald and Elizabeth Ahnert's operation on 24 Pup, Hunker Creek.

Two 3-inch Honda pumps supplied the 200 igpm needed to process approximately 20 cubic yards per hour in 1998, 1999 and 2000. A 3-inch by 4-inch Keene pump replaced one of the Honda pumps in 2001. The processing rate dropped to approximately 8 cubic yards per hour in 2001.

GROUND DESCRIPTION The stratigraphic section was composed of approximately 17 feet of muck that contains large blocky bedrock overlying 5 feet of gold-bearing gravels. Bedrock has been found to vary from solid and blocky to fully decomposed. As in the past several years, all of the gravels and 1-foot of the bedrock were sluiced.

MINING CUTS This operation has mined at a small scale with a single piece of equipment and considerable hand work. Difficult sections of overburden that contain large blocky bedrock have been encountered as the mining progressed downstream. Some pay gravels were reached in 1998 and stockpiled for sluicing in 1999. During 1999, a 14-foot shaft was dug to try and locate the pay streak and a 160-foot long cut was stripped to within 5 feet of paydirt for sluicing in 2000. The weather in 2000 was very dry and only a small amount of sluicing was done in the spring due to the lack of water. The summer of 2001 was much wetter than normal and water was available throughout the season. A single cut 75 feet long by 15 feet wide was processed in 2001. A cut 50 feet long by 10 feet wide was processed in 2002.

WATER SUPPLY AND TREATMENT 24 Pup is a steep valley with a small watershed. Water has been a limiting factor for sluicing. In 2000, very little rain fell and sluicing was limited to a period in the spring. In past seasons, small springs have provided water throughout the summer but they disappeared in 1999 and 2000. A spring reappeared in 2001, and along with the heavier than normal rainfall, water was available for sluicing. Some hydraulic stripping was done by monitor when water was available. An out-of-stream full recycle system was used.

Gerald and Elizabeth Ahnert standing on the porch of their cabin on 24 Pup.

GOLD This tributary of Hunker Creek continues to produce interesting and varied types of gold. Both crystalline and dendritic gold is recovered. The gold is typically coarse and nuggets up to 2½ ounces have been recovered. The purity was reported to be 845 fine. Gerald Ahnert has successfully used a metal detector to check the bedrock and washed tailings for nuggets. Large pieces of soapstone suitable for carving are found in the gravels near the top of the mined portion of 24 Pup.

HUNKER CREEK 115O/15

Eureka Gold Panning Adventures	63°54'N 138°55'W
Water Licence: PM99-052	1998, 1999, 2000, 2001
Bonanza-Hunker Placer Area	**Site no. 51**

OPERATION/LOCATION Morris and Sandy George ran a two-person hand mining operation and tourist gold panning venture on Right Fork Hunker Creek from 1998 to 2001.

EQUIPMENT/FUNCTION A Bantam excavator was leased for short periods of time to strip overburden and expose pay gravels. Hand-held tools were used to excavate the pay gravel and to feed the wash plant.

WASH PLANT Two high bankers were used on the property. Each consisted of a 12-inch by 16-inch grizzly and a 26-inch by 26-inch hopper with water manifold, followed by a single sluice run 12 inches wide by 8 feet long. One sluice run started with 1 foot of 1-inch flat bar riffles, followed by expanded metal riffles over Nomad mat, and the other sluice run had expanded metal riffles over Nomad mat for the full length. Two Briggs and Stratton 2-inch water pumps, powered by 3 horsepower gasoline engines, supplied water to process from ½ cubic yard up to 1½ cubic yards per hour "on a good day." Rocker boxes and gold pans were available for the tourists who visited the property.

GROUND DESCRIPTION Up to 21 feet of frozen black muck overburden was stripped from on top of the first layer of fine gravel and sand, which was only 18 to 24 inches deep and contained no gold. Next came a layer of heavy clay mixed with black dirt containing magnetite but little gold. The bottom layer of pay gravel was coarse gravel mixed with rocks and boulders about 1½ to 2 feet deep on top of decomposed bedrock. All of the lower gravels and the surface of the bedrock was sluiced.

MINING CUTS In 1998, 1999 and 2000, only hand mining occurred. In 2001, approximately 2280 cubic yards of frozen overburden was mechanically stripped from on top of virgin pay gravels which were then mined using hand-held tools.

WATER SUPPLY AND TREATMENT Water was pumped directly from Right Fork Hunker Creek. Small out-of-stream settling ponds below each wash plant treated the effluent before being discharged back into the creek.

Gold The gold tended to be chunky and between 10 and 16 mesh size with a few small nuggets. The purity was reported to be 798 fine.

RIGHT FORK HUNKER CREEK 115O/15

Tom McMahon	63°51'N 138°54'W
Water Licence: PM99-021	1999, 2000, 2001, 2002
Bonanza-Hunker Placer Area	**Site no. 52**

Operation/Location Tom McMahon operated a small-scale operation along the right limit of the right fork of Hunker Creek near its headwaters in 1999, 2000 and 2002. Very little activity occurred in 2001. A single employee helped out when needed during sluicing.

Equipment/Function A Gradall excavator was used for stripping, feeding the wash plant, handling tailings, constructing drains, and the construction and maintenance of settling facilities.

Wash Plant A New Zealand-style wash plant was used. A hopper fed pay into a 3½-foot diameter by 12-foot long trommel. Eight feet of ½-inch screen classified the pay gravels before being sluiced. The ½-inch minus pay passed over two boil boxes before being sluiced through a single sluice run 6 feet wide by 5 feet long. Hydraulic riffles were used. A 30-inch wide by 28-foot long conveyor stacker was added in 2002. A 5-inch high pressure pump, powered by a 4 cylinder Isuzu engine, supplied the 600 igpm needed to process approximately 40 cubic yards per hour.

Ground Description The ground along the right limit at the top of the property varied in depth from 15 to 20 feet deep. Approximately 15 feet of mixed black muck and slide rock overlies a maximum of 4 feet of gravel. Bedrock varied from solid and fractured to fully decomposed. The ground was mixed up from previous activities back to oldtimers, likely at the turn of the 20th century, which meant that everything needed to be sluiced. The cut along the right limit further down on the property was approximately 5 feet deep. The lower 2 feet of gravel and up to 3 feet of bedrock was sluiced.

Mining Cuts A single cut 250 feet long by 30 feet wide was sluiced in 1998. Three cuts measuring 250 feet long by 36 feet wide, 250 feet long by 40 feet wide and 250 feet long by 12 feet wide were sluiced during the 2000 season. No mining occurred in 2001. A cut approximately 400 feet long by 12 feet wide and a cut 200 feet long by 20 feet wide was sluiced during 2002.

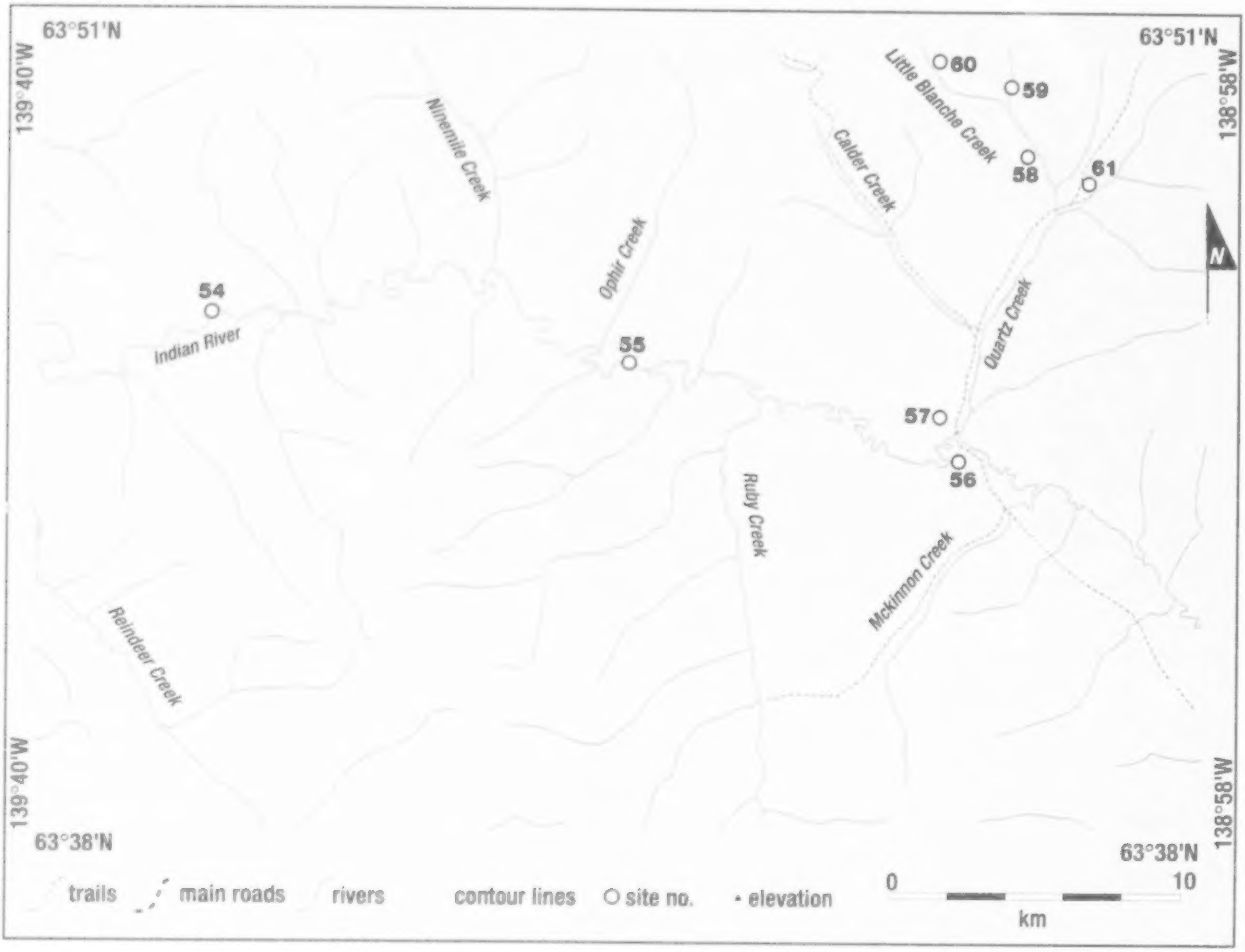
Water Supply and Treatment Due to the small watershed above this operation, water shortages have been a problem over the years. During 1999, springs exposed during stripping provided make-up water for the two out-of-stream pump pond/settling ponds. By the fall of 1999 and throughout 2000, the water in the right fork of Hunker Creek was turned into the full recycle system. Generally no direct discharge occurred.

Gold The gold was reported to be a mixture of both fine and coarse gold. The gold was screened to 10% +4 mesh, 30% -4 to +20 mesh, 60% -20 mesh. Most of the gold was rough and many of the small nuggets contained quartz. The gold is slightly dull in colour and mercury was common. The purity of the gold was 800 fine.

Thomas McMahon, Right Fork, Hunker Creek.

KLONDIKE:
INDIAN RIVER
PLACER AREA

SITES 54-61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59
Little Blanche Creek
Ninemile Creek
Calder Creek
58
61
Ophir Creek
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Indian River
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Quartz Creek
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Ruby Creek
Mckinnon Creek
Reindeer Creek
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63°38'N
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trails
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LEGEND

54...... David McBurney, Indian River
55...... 8629 Yukon Ltd., Indian River
56...... ISSL Canada Inc., Indian River
57...... Kim Ferguson, Quartz Creek
58...... Harvey Miller, Little Blanche Creek
59...... Irv Nafziger, Little Blanche Creek
60...... Barbara Coomes, Little Blanche Creek
61...... Tatlow Placers, Quartz and Little Blanche creeks

INDIAN RIVER 115O/13

David McBurney	63°46'N 139°34'W
Water Licence: PM96-076	1998, 1999, 2000, 2001, 2002
Indian River Placer Area	**Site no. 54**

OPERATION/LOCATION David McBurney ran a three-person operation along the right limit of the lower Indian River below Bertha Creek in 1998 and 1999, moving upstream and across to the left limit in 2000, 2001 and 2002. Another two-person operation just upstream on the right limit was sub-contracted under the same water licence to different operators: Tim Osler in 1999 and 2000 and Kim Ferguson in 2001.

EQUIPMENT/FUNCTION One Caterpillar D9G bulldozer was used for ripping and stripping frozen overburden, flattening tailings and spreading topsoil for restoration. Two Hitachi EX200 excavators were used for digging pay gravels, feeding the wash plant and removing tailings. In 2000, a new conveyor belt, 3 feet wide by 100 feet long, mounted on used excavator tracks, was added to reduce stripping costs; the stripped overburden and waste gravel was loaded onto the conveyor using one of the excavators, at a rate of about 250 cubic yards per hour. The two-person operation upstream on the right limit used an excavator for digging gravel and feeding the wash plant

WASH PLANT A trommel, 5 feet in diameter by 15 feet long, mounted on steel skids, classified material to ½ inch. A single sluice run, 2½ feet wide by 4 feet long with angle iron riffles, fed into five hydraulic riffle tables, 13 feet wide by 12 feet long. Tailings were stacked by a 40-foot long conveyor belt. An Indeng water pump, 6 inches by 6 inches, powered by an Isuzu GBGIT diesel engine, delivered about 900 igpm which was used to process 85 cubic yards per hour.

David McBurney mining operation on Indian River.

GROUND DESCRIPTION Frozen sandy overburden along the right bank of the Indian River was 3 to 9 feet deep on top of frozen pay gravel which varied from 5 to 10 feet deep. As mining progressed farther away from the river bank, a layer of waste gravel was encountered which increased up to 10 feet deep on top of the pay gravel layer. The bottom 6 feet of pay gravel plus 1 to 3 feet of bedrock were sluiced. On the left limit of the Indian River the frozen mud, silt and sand varied from 4 to 20 feet deep on top of waste gravel up to 10 feet deep. Five to 6 feet of pay gravels and 1 to 3 feet of bedrock were sluiced. The bedrock was extremely wavy and appeared to striate the valley perpendicular to the creek, making it very difficult to estimate how much gravel or pay would be found.

MINING CUTS In 1998 and 1999 on the right limit, per season respectively, 75,000 and 85,000 cubic yards were processed and 300,000 and 325,000 square feet of bedrock were exposed. In 2000 and 2001 on the left limit, per season respectively, 82,000 and 85,000 cubic yards were sluiced with 110,000 and 140,000 cubic yards of overburden stripped and 290,000 and 310,000 square feet of bedrock exposed. Mining cuts were excavated about 150 feet wide in consecutive strips, parallel to the river banks. In 2002, approximately 78,000 cubic yards were sluiced and 315,000 square feet of bedrock were exposed with 173,000 cubic yards of overburden stripped.

WATER SUPPLY AND TREATMENT Water was pumped directly from the Indian River using fish screen mesh on the pump intake and was settled in out-of-stream ponds in old mining cuts.

GOLD Gold was mostly fine flakes with some coarse, flat flakes and fineness around 810.

COMMENTS Reclamation works included backfilling mining cuts, flattening tailings piles and spreading overburden for re-vegetation as well as restoring and armouring one bank of the river.

INDIAN RIVER 115O/14

8629 Yukon Ltd.	63°45'N 139°21'W
Water Licence: PM99-046	1998, 1999, 2000, 2001, 2002
Indian River Placer Area	**Site no. 55**

OPERATION/LOCATION Dennis and Ken Foy and their families continued to mine at this location, upstream from Ophir Creek, for 1998 and 1999. Activities were curtailed half way through the 2000 season and some equipment was moved to Alaska on another project. In 2001, numerous rock falls and a severe washout destroyed the access road and other than a brief visit, no mining took place. The mining lease

Dennis Foy's Indian River placer pit.

with the owner of the claims, Nnahtur Resources Ltd., was terminated in 2002, and Mr. Foy moved his equipment and property from the site. Mr. Kim Ferguson was authorized to do some testing during the season under this water licence which did not pan out.

EQUIPMENT/FUNCTION Stripping overburden and pushing pay was conducted with a Caterpillar D10N, while the wash plant was fed with a Caterpillar excavator. Tailings were removed with either a Fiat HD31 or 41 bulldozer. A Hough 666 excavator was also employed.

WASH PLANT A 24 by 15-foot dump box and grizzly was lined with ½-inch punch plate. A conveyor fed the wet hopper attached to four sluice runs. 3000 igpm of water was delivered by a 12-inch Morris pump to sluice about 150 cubic yards per hour.

GROUND DESCRIPTION This operation is in a very wide, flat part of the Indian River Valley. Overburden is only 4 to 6 feet deep and the gravel layer averages 10 to 12 feet deep. Gravels and 2 to 3 feet of the underlying decomposed bedrock were sluiced.

MINING CUTS In 1998, three cuts were made totalling 321,200 cubic yards of material. No further cuts were made at this site. In 2002, only cleanup, some reclamation and testing were performed.

WATER SUPPLY AND TREATMENT This was an out-of-stream operation, obtaining water from groundwater seepage into old mine cuts. An armoured diversion was built for the Indian River on the right limit of the valley to bypass the mining area.

GOLD Gold is extremely fine-grained and assayed out at approximately 800.

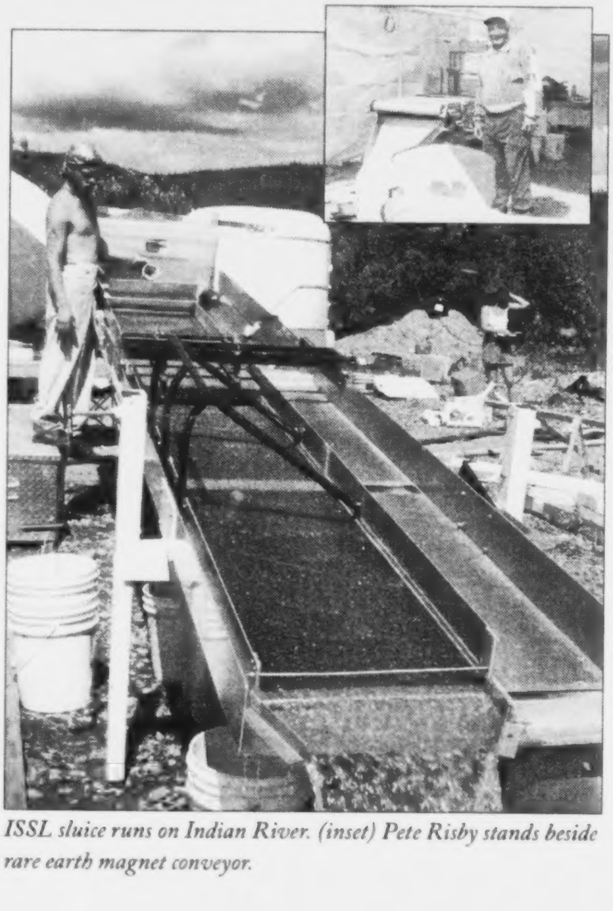
COMMENTS Rising costs of fuel, "tired iron" maintenance and family health problems inspired the Foys to "pack-in" this project.

INDIAN RIVER 115O/11

ISSL Canada Inc.	63°44'N 139°08'W
Schedule III, LP00314	2002
Indian River Placer Area	**Site no. 56**

OPERATION/LOCATION This was a small out-of-stream operation located at the Risby camp at the mouth of Quartz Creek. The company leased claims from Nnahtur Resources Ltd. to test a magnetic recovery system (MRU) for separating black sands from fine gold. Five miners and one camp personnel were employed.

EQUIPMENT/FUNCTION A small Kubota R520 excavator was used to collect old cleanup tailings from four or five locations for additional processing and gold recovery.



ISSL sluice runs on Indian River. (inset) Pete Risby stands beside rare earth magnet conveyor.

Wash Plant The material was first put through two 8-foot culvert dryers, then run over a dry separating system equipped with rare earth magnetics. Final cleanup was done across a wet sluice equipped with rare earth magnets. A Honda 5HP gasoline pump was used, capable of pumping about 60 igpm. The operation processed about 1 cubic yard per hour.

Ground Description Excavation was in already stockpiled waste piles.

Mining Cuts No cuts were made.

Water Supply and Treatment Water was acquired from an existing pond and any sluice box effluent was quickly absorbed by the existing coarse tailings. The entire operation was conducted well out-of-stream.

Gold The gold was extremely small, smooth particles down to 400 mesh. Fineness of the gold averaged about 800. The system did recover a surprising amount from the concentrates, indicative of the efficiency of the system.

INDIAN RIVER 115O/11

Kim Ferguson	63°45'N 139°08'W
Schedule III, LP00323	2002
Indian River Placer Area	**Site no. 57**

Operation/Location This was a small family operation to test and, if feasible, mine out a portion of a bench claim off Indian River near the mouth of Quartz Creek. Mr. Ferguson optioned the ground from Nnahtur Resources Ltd. The operation was completed in early fall and all reclamation was performed. For the duration of the program, Mr. Ferguson's family moved a mobile trailer into the area of the Risby camp. Two miners and one camp personnel were involved in this operation of short duration.

Equipment/Function A Caterpillar EL300 and Caterpillar D966A excavator was used to excavate material and feed the sluice box, as well as for stripping and reclamation.

Wash Plant A small trommel and pump were used to complete this less than 300 cubic metres per day operation.

Ground Description The area was in close proximity to already mined ground. Overburden was a nominal 2 to 3 feet and the ground was not frozen. Coarse Indian River gravels to bedrock were observed and bedrock itself was typical blocky, unconsolidated schist.

Mining Cuts Two cuts were made at the site, one approximately 600 by 30 feet and the second around 450 by 45 feet.

Water Supply and Treatment Activities were conducted well out-of-stream using an existing tailings pond as a reservoir and discharging effluent onto old coarse tailings with no return to any creek.

Gold As is typical in this area of Indian River at Quartz Creek, gold was fine and flaky with very few to none of nugget or jewellery size. Fines were generally 785.

Comments As per the requirements of this Class II approval, reclamation was completed before the operator left the site.

LITTLE BLANCHE CREEK 115O/14

Harvey Miller	63°48'N 139°05'W
Water Licence: PM98-026	1998, 1999, 2000, 2001
Indian River Placer Area	**Site no. 58**

Operation/Location This operation is located on Little Blanche Creek approximately one mile upstream from its confluence with Quartz Creek. Harvey Miller mined this property alone, leasing the claims from Murray Crockett.

Equipment/Function A D824 Caterpillar bulldozer with a straight blade and no ripper was used for all stripping and sluicing. A P&H 1¼-yard bucket dragline was used to dig reservoirs and drains and to bail out settling ponds.

Wash Plant An 18- by 8-foot dump box fed a single, long tom type sluice run measuring 3 by 25 feet long. The sluice run contained 1½-inch Hungarian riffles. Water was acquired with a 6-inch Gould pump powered by a 271 General Motors diesel engine, providing around 1200 igpm. Mr. Miller's processing rate was about 30 cubic yards per hour.

Ground Description Overburden averaged between 10 and 14 feet deep. Pay gravels were anywhere from 12 to 18 feet below the frozen black muck. Bedrock was composed of decomposed grey clay and blocky brown schist. The sluice section was composed of 12 feet of gravel and 1½ feet of broken up bedrock.

Mining Cuts Over a period of four years, Mr. Miller remained in the same basic location, opening up an area approximately 125 by 100 feet. In 1998, only mechanical stripping of this area was done. In 1999 and 2000, approximately 38 hours of sluicing was accomplished out of an area 80 by 60 feet. There was no activity other than equipment maintenance in 2001. Overburden is stacked on bench for later reclamation work.

Water Supply and Treatment Prior to the temporary closure of the Tatlow Little Blanche operation in 2000, Mr. Miller was able to settle effluent in the ponds at the mouth of Quartz Creek. He now has to construct sufficiently stable settling ponds on his own claims and not pass effluent downstream

Harvey Miller working in mine cut on Little Blanche Creek.

of his boundary which may account for the lack of activity in 2001.

Gold Gold ranged from fine to coarse with 20% from -14 to +10 mesh and 80% between -16 and +60 mesh. The fineness is usually between 700 and 720.

LITTLE BLANCHE CREEK 115O/14

Irvin Nafziger	63°49'N 139°06'W
Water Licence: PM98-055	1998, 1999, 2000, 2001, 2002
Indian River Placer Area	**Site no. 59**

Operation/Location Irvin Nafziger mines approximately 2 miles upstream from the confluence of Little Blanche with Quartz Creek. In 1998, he reduced his operation to two people, one miner and one camp personnel, working one 8-hour shift daily.

Equipment/Function Using alternatively a D8H and a D8L Caterpillar bulldozers and an O&K 2-yard bucket excavator, Mr. Nafziger employed conventional placer methods in strip thawing and monitoring black muck to uncover the pay gravels.

Wash Plant Pay was fed into a 10 by 10-foot hopper with a grizzly onto a Super Sluice IV screen deck. Two sluice runs with Hungarian riffles, Nomad matting and #4 expanded metal measuring 4 feet wide by 12 feet long classified the material down to 1 inch. The pump, used for both monitoring and sluicing as required, was a General Motors 8 by 6-inch unit powered by a 371 diesel engine of the same make, capable of 1500 igpm. Approximately 70 cubic yards were processed an hour and final cleanups were done with a long tom.

Ground Description Frozen organic overburden reached a depth of 20 feet and was mixed in with gravel layers. Bedrock was quite wavy and there was little evidence of old workings or bones. Four feet of gravels were sluiced. The waste sections were stockpiled, where possible, for use in road work, water structures and/or reclamation. In 2001 and 2002, Mr. Nafziger moved progressively downstream of the camp, where depths were shallower. Bedrock was found at around 10 feet and 2 feet of gravels and 2 feet of unconsolidated bedrock were sluiced.

Mining Cuts One cut measuring approximately 500 by 150 feet was mined each year over the period of 1998, 1999 and 2000. In 2001, three separate pits were excavated, measuring 150 by 90 feet, 230 by 40 feet and 300 by 70 feet. The mining cuts in 2002 were 300 by 54 feet and 225 feet by the same width.

Water Supply and Treatment Water was first acquired by way of a reservoir pond excavated on upper Little Blanche. To acquire sufficient water in 2002 for sluicing in this low-volume creek, a 200 by 200-foot recirculating pond was employed and approximately 80% of the water was

Irvin Nafziger's sluice plant on Little Blanche Creek.

recirculated. Treatment of effluent was in-stream, with settling ponds created by damming old mine cuts on the property, although initially Mr. Nafziger used Little Blanche and Quartz creeks as conduits to send efflluent to settling ponds at their confluence with the Indian River.

Gold Gold was flat and angular, ranging from +30 to +50 in particle size. The gold had a dull appearance and only about 3% recovery were nuggets. Fineness was about 640.

Comments Some reclamation work was accomplished near the camp. New and improved settling facilities are being constructed and once in place, further contouring and spreading of overburden can be done in the mined-out areas. In 2002, Mr. Nafziger noted that the creek had insufficient gold at the current value for his needs.

LITTLE BLANCHE CREEK 115O/14

Barbara Coomes	63°51'N 139°05'W
Water Licence: PM01-221	2002
Indian River Placer Area	**Site no. 60**

Operation/Location This operation is located on the Right Fork of Little Blanche Creek and includes a Discovery claim on a left limit tributary. Barbara Coomes and Dave Trainer have an operation on Carmacks Fork and travelled to this property for a short period of time in the 2002 season.

Equipment/Function A D6 Caterpillar bulldozer was used to perform stripping and trenching to prepare ground for mining.

Wash Plant No wash plant was required at this time. Any bulk sampling was taken back to the operation at Carmacks Fork (site no. 14) for testing.

Ground Description At the confluence of the Right Fork with the tributary, testing indicated there was 20 feet of black muck, over 10 feet of gravels. It is intended to sluice the bottom 3 feet. Bedrock is composed of yellow, unconsolidated schist. The bench ground upstream is about 20 feet above the creek and consists of only 3 feet of black muck overlaying a 6 to 8 feet bed of gravel. Once again, testing in this location indicates that only 3 feet of the gravels should be sluiced, although it may prove more economical to sluice the entire section.

Mining Cuts Three areas were stripped to begin the process of thawing the frozen black muck. One approximately 150 by 150 feet, the second 300 by 50 feet, and the third one 50 by 50 feet. While the first two were only excavated to 6 feet deep, the third area achieved a depth of 12 feet.

Water Supply and Treatment At the current time, no water was used. The licence allows for both in-stream reservoirs and settling facilities.

Gold An insufficient amount of gold was recovered during testing to describe overall qualities. Fines at the lower Nafziger operation are generally in the neighbourhood of 640 and the gold is flat and angular.

Comments Barbara Coomes and Dave Trainer both noted the unusually high number of bears in the area for such a narrow valley. When they move to the property, the camp set up will have to be extra bear proof.

QUARTZ CREEK 115O/14

Tatlow Placer Mines	63°49'N 139°04'W
Water Licence: PM99-135	1998, 1999, 2000, 2001, 2002
Indian River Placer Area	**Site no. 61**

Operation/Location Kevin and Gary Tatlow, along with their father, Ken Tatlow, continued their family mine operation at the confluence of Little Blanche and Quartz creeks. Four miners were employed, along with two camp personnel running a daily shift of 12 hours. In 2002, Ken Tatlow ran the operation at a considerably reduced activity level with his wife, Joan Tatlow. Work was confined to monitoring and strip thawing material on Quartz Creek upstream of the camp.

Equipment/Function One D9L Caterpillar bulldozer equipped with a U-blade and ripper was used to strip the mine area, while material was hauled out by three Terex S-24b scrapers with 24 cubic yard capacity. An Hitachi EX300 excavator fed the sluice plant and performed other services such as ditch digging and reclamation. Upon the decision to downsize in 2001, several pieces of equipment were put up for sale and only the Hitachi EX300 excavator and the D9L Caterpillar bulldozer were kept in service for 2002.

Wash Plant A 12 by 10-inch Morris pump, powered by a Caterpillar 3408 diesel engine, capable of 4500 igpm processed approximately 200 cubic yards per hour. The sluice plant was comprised of a 6 by 20-foot double decker screen deck to which four sluice runs, approximately 4 feet wide by 16 feet long were attached. By 2002, only a triple sluice with a 4-foot centre run and two 4-foot side runs were used. The boxes were lined with Nomad Matting with 1-inch Hungarian riffles on the side runs and 2½-inch on the centre run.

Ground Description Mining was focussed on the right limit bench of Little Blanche Creek with some strip thawing and testing being done upstream of camp on Quartz Creek proper. The ground at Little Blanche was composed of 12 feet of frozen black muck, over 40 to 50 feet of gravels. Bedrock was partially decomposed. The gold was found in the last 10 feet of this section and the first 4 or 5 feet of the unconsolidated bedrock. Upper Quartz averaged approximately 6 to 8 feet of black muck and 35 feet of gravels overlaying a similar bedrock structure. About 15 feet of the

Tatlow Placers' monitor on Upper Quartz Creek.

lower gravels were sluiced, with the remainder being settled out or stockpiled for reclamation purposes.

MINING CUTS Over the course of the past 4 years, three huge pits were excavated, each averaging about 100 by 700 feet. The waste sections were hauled out by the Terex scrapers and stockpiled for use in road construction and for reclamation purposes. In the fall of 2000, the Little Blanche Creek mine area was put into temporary closure due to the rising price of fuel and the large amounts of material to be moved. In 2001, the remaining stockpiles were sluiced and some preparatory work was done on upper Quartz Creek. The mine cut in 2002 was 200 feet long by 75 feet wide.

WATER SUPPLY AND TREATMENT This operation was conducted out-of-stream with an 80% recycle system. Water for the camp and sluicing purposes was collected in a reservoir constructed at the mouth of Canyon Creek. Settling ponds consisted of a series of old mine cuts and dredge ponds that are situated at the mouth of Quartz Creek. At the cessation of mining on Little Blanche Creek, a stable channel was restored. In the event of changes to requirements, on-site settling pond construction has been contemplated for future mining. A reservoir has been constructed to provide water for monitoring and sluicing, out of which 80% is recycled.

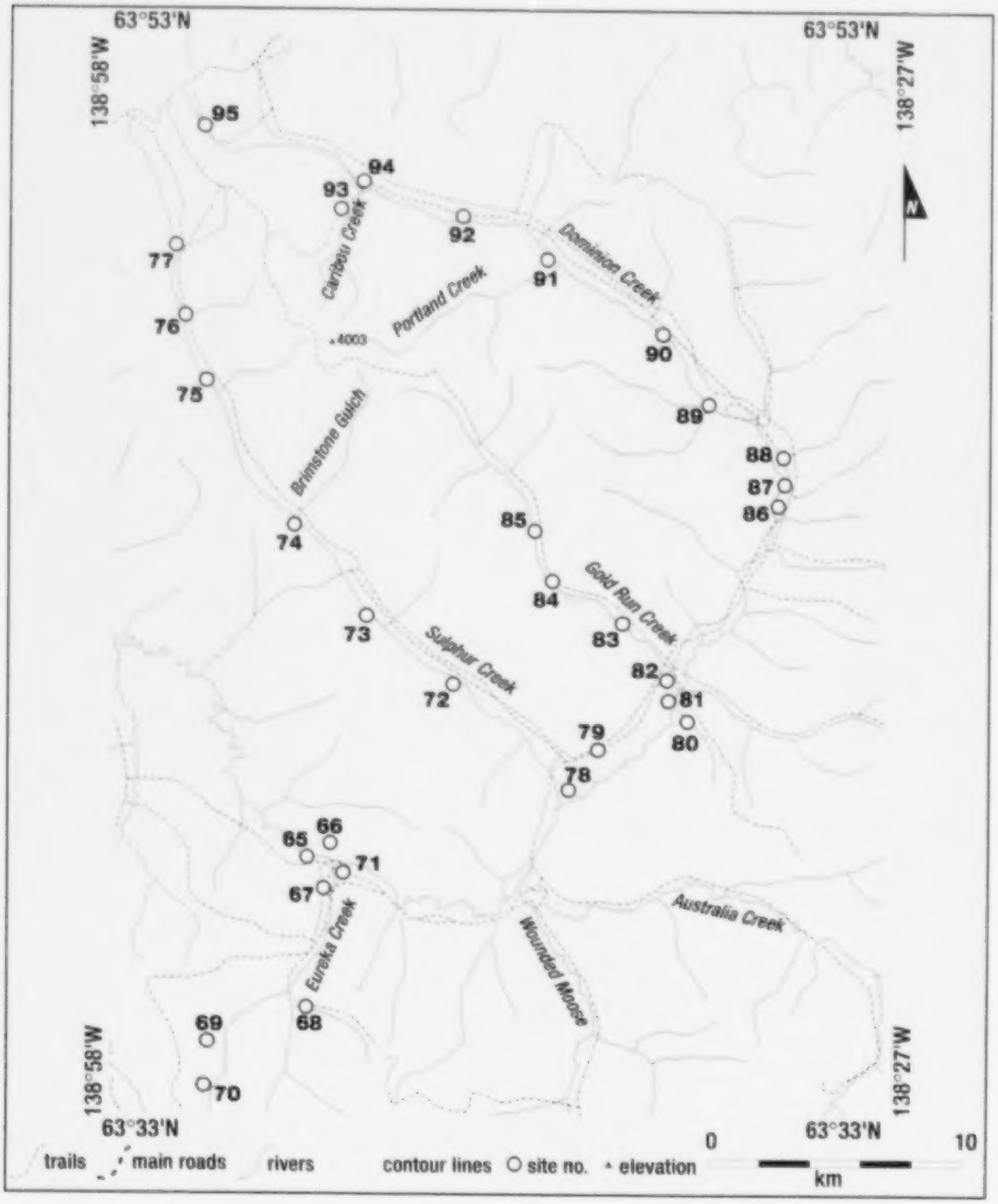
GOLD The gold recovered on both Little Blanche and Upper Quartz creeks is brightly coloured and chunky with a fineness of ranging between 670 and 750. Mesh sizes were 15% at +10, 70% from -10 to +60 and the remaining 15% at -60 mesh.

COMMENTS The rising costs of fuel and marginal returns on gold production have caused this family to re-think their long-range plans for the mine operation. Reclamation and restoration at the Little Blanche mine site has nearly been completed. Much of the equipment and other mine assets have been put up for sale, or has already been sold. Mr. Tatlow has adopted a "wait and see" outlook for the future.

Tatlow Placers open pit on Little Blanche Creek.

KLONDIKE:
DOMINION-SULPHUR
PLACER AREA

**SITE NO.
65-95**


63°53'N
63°53'N
138°58'W
138°27'W
N
95
94
93
Caribou Creek
92
77
Dominion Creek
91
Portland Creek
76
4003
90
75
89
Brimstone Gulch
88
87
86
85
74
Gold Run Creek
84
73
83
Sulphur Creek
82
81
72
80
79
78
66
65
71
67
Australia Creek
Eureka Creek
Wounded Moose
68
69
70
138°58'W
138°27'W
63°33'N
63°33'N
0
10
km
trails
main roads
rivers
contour lines
site no.
elevation

LEGEND

65...... Tamarack Inc., Indian River
66...... Midas Rex Mining, Indian River
67...... Star North Placers, Eureka Creek
68...... Eureka Placers Ltd., Eureka Creek
69...... Miyahama, Hiro, Eureka Creek
70...... Ripper Mining, Eureka Creek
71...... Aurion Placers, Indian River
72...... Henry Kruger, Sulphur Creek
73...... Mary Ange Resources, Sulphur Creek
74...... Lucky Lady Placers, Sulphur Creek
75...... Sulphur Gold Placers, Sulphur Creek
76...... Coulee Resources, Sulphur Creek
77...... Neils Sprokkreeff, Sulphur Creek
78...... Gatenby Mining, Dominion Creek
79...... Gimlex Enterprises Ltd., Dominion Creek
80...... George Abermeth, Lee Pup
81...... Adrian Hollis (Ross Mining), Dominion Creek
82...... Ross Mining, Dominion, Rob Roy
83...... Mary Ange Resources (Klein), Gold Run Creek
84...... Ray Lizotte, Gold Run Creek
85...... D & P Mining, Gold Run Creek
86...... A-1 Cats (Ross Mining), Dominion Creek/Arkansas Creek
87...... M. & V. Johnson, Dominion Creek
88...... Peter Bodin, Kentucky Creek
89...... Jim Conklin, Dominion Creek
90...... Arthur Sailer, Dominion Creek, Nevada
91...... Arthur Sailer, Dominion Creek/Champion Creek
92...... Favron Enterprises Ltd, Dominion Creek
93...... James Stuart, Caribou Creek
94...... Arthur Sailer (Stuart), Dominion Creek at Caribou Creek
95...... Tim Coles (Adams), Upper Dominion Creek

INDIAN RIVER 115O/10

Tamarack Inc. 63°38'N 138°53'W
Water Licence: PM98-071 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area **Site no. 65**

OPERATION/LOCATION This operation is located at the mouth of Eureka Creek on left limit of the Indian River. Frank Short and Tony Beets moved to this site from Paradise Hill. They employed four miners and two camp personnel, working a 12-hour daily shift. By 2002, there was only one miner and one camp personnel working a single eight to 12-hour shift daily.

EQUIPMENT/FUNCTION Two 657 Caterpillar scrapers were used to strip and stockpile the pay gravels. Two D9 Caterpillar bulldozers were used to push the scrapers and feed the sluice plant and other miscellaneous jobs. Two wheeled Caterpillar scrapers hauled pay gravels to the sluice plant. One 245 Caterpillar loader was used for loading the haulers.

WASH PLANT A 90 cubic yard hopper with a 4 by 16-foot apron feeder put the pay gravel onto a variable speed conveyor which was 4 feet wide and 60 feet long. The gravels were conveyed to a trommel measuring 8 feet in diameter by 50 feet long, where the last 6 feet classified the pay to ¾-inch minus. A 2-foot wide by 45-foot long chute divided the slurry into six oscillating runs, each 3 by 20 feet in size. The runs were lined with Nomad matting and expanded metal. The Morris 10 by 12-inch pump was powered by a 3406 Caterpillar diesel engine capable of producing 1200 igpm. Approximately 100 cubic yards per hour were processed.

GROUND DESCRIPTION The stratigraphy of this area proved to be 5 to 6 feet of black muck, 5 to 6 feet of barren gravels with 2 feet of pay. Total depth averaged from 12 to 14 feet. The sluiced section was generally 2 feet with a waste section of 10 feet. Interestingly, a site visit by placer geologist Bill Lebarge, revealed that the "Ross" gravels continue this far downstream.

Tamarack's sluice plant on Indian River.

MINING CUTS The first area stripped to thaw in 1999 measured 600 by 250 feet. Most of that season was spent setting up camp, and preparing ground for mining. During 2000, a further 2 cuts were made one 500 by 200 feet and the other 600 by 200 feet. Generally, the depths did not vary from the 12 to 14 feet. An area 200 by 200 feet and one 300 by 200 feet was completed in 2001 and one of a similar size in 2002.

WATER SUPPLY AND TREATMENT Water was acquired from the Indian River and collected by seepage and flow in an old mine cut just upstream of the mouth of Eureka. The settling ponds were out-of-stream and measured approximately 700 feet by 600 feet. No recycling was required due to the amount of seepage.

GOLD Gold was extremely fine-grained with no appreciable sized nuggets. The fineness ran from 820 to 830 in purity. Final clean-ups were conducted with a Pro-Pulse jig.

COMMENTS This operation has been slow to start up, but plans to be in major production by 2003. While not a great season in 2002, ground has been stripped to thaw.

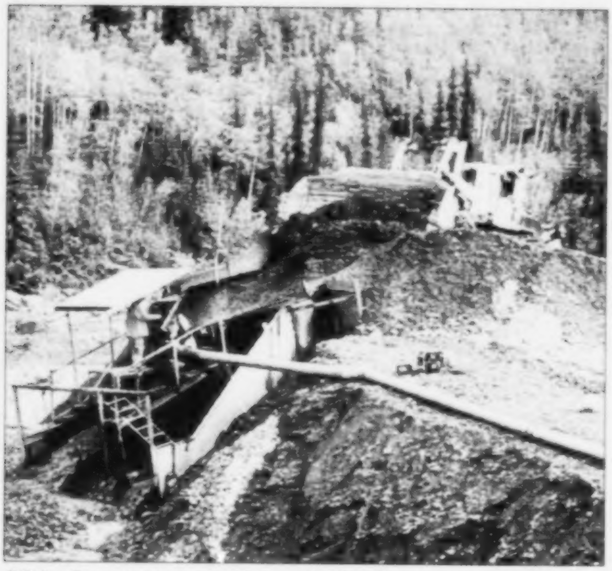
INDIAN RIVER 115O/10

Midas Rex Mining and Exploration Ltd. 63°40'N 136°55'W
Water Licence: PM94-080 1998, 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area **Site no. 66**

OPERATION/LOCATION Midas Rex moved to this location on Indian River near and around the mouth of Eureka Creek in the fall of 1997. For the years 1998 and 1999, six miners worked this operation performing two 12-hour shifts with one camp personnel. For 2000 and 2001, this was reduced to four miners with two camp personnel. There was no work in 2002 other than further camp removal.

EQUIPMENT/FUNCTION One Caterpillar D10N with a U-blade was employed stripping overburden and pushing pay gravels up to the "big" box.

WASH PLANT The dump or "big" box measured 16 by 20 feet and was connected to a 4 run sluice lined with Nomad carpeting, expanded metal and 1-inch Hungarian riffles made out of angle iron. An additional run using ¾-inch punch plate was used to handle the oversized material. The box tender washed the material as it was dropped into the dump box. Water was supplied by a 12 by 14 Morris pump, powered by a Caterpillar 3408 diesel engine, capable of



Midas Rex sluicing operation on Indian River.

pumping 2500 igpm. Approximately 160 cubic yards were processed per hour.

GROUND DESCRIPTION The ground was very consistent, averaging 2 to 4 feet of sand and muck intermixed, 6 to 10 feet of barren reddish coloured gravels, and the bottom 4 feet only containing greyish pay gravels. No bones, old workings or shafts were encountered.

MINING CUTS Seven cuts were mined per season. Over a mile of the right limit of Indian River, averaging 750 feet in width, was excavated, processed and reclaimed. Nearly 1,500,000 cubic yards of material were moved, out of which 900,000 cubic yards were sluiced.

WATER SUPPLY AND TREATMENT All water acquisition was from the Indian River using previously mined cuts for out-of-stream settling ponds. A minimum of three ponds were used at all times to settle out effluent prior to re-entry into the Indian River. No recycling was required.

GOLD The particle size of the gold was small, having a flaky, floury and pebbly type consistency. The concentrate was run through a long tom, screened for particle size and run over a Diester table. Fineness ran about 830.

COMMENTS The operator referred to the pay streak as being elusive and evasive. Considerable focus was placed on restoration and reclamation of tailings which was accomplished immediately upon the cessation of mining, along with camp cleanup and removal of structures. The operation has gone into temporary closure given the high costs of fuel and low price of gold, making the profit line marginal at best.

EUREKA CREEK 115O/10

Star North Placers Ltd.	63°36'N 138°48'W
Water Licence: PM99-127	1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 67**

OPERATION/LOCATION John Loveless et al. acquired this property from Wayne Tatlow and Pamela Nowlin (Sky Dawn) in 1999 and commenced mining approximately 5 kilometres upstream on Eureka Creek from the site of their 1998 operation (Aurion Placers). Consequently, it was a short haul to move equipment to this new area and they were able to utilize their existing camps and infrastructure. They employed five miners and two camp personnel and worked two 12-hour shifts for 1999 and 2000. In 2001, John Loveless and family did not return to the site. Troy Cahoon continued to operate with Hiro Miyahama and sluiced into early November regardless of the icicles. Only two miners and four camp personnel were employed. Both men moved from this property in 2002 to begin mining further upstream on the Right Fork of Eureka.

EQUIPMENT/FUNCTION Two D10 and two D9L Caterpillar bulldozers were used for stripping and stockpiling pay gravels. The bulldozers were equipped with U-blades and single shank rippers. An EL300 Caterpillar excavator fed the sluice plant and dug ditches as required. To stack tailings and perform yard work, a Caterpillar 980C loader was employed. All equipment was used at various times for the purpose of restoration and reclamation. In 2001, however, the operation downsized considerably and only one D9H was employed for all works.

WASH PLANT A 5 by 16-foot ELRUSS incline shaker plant, fed via a hopper, screened material to minus ¾ inch. Four 4 by 16-foot sluice runs were lined with unbacked Nomad matting and expanded metal. Half-way down the length of each sluice run, a short 4-foot section of 1-inch Hungarian

Star North late fall sluicing by Troy Cahoon on Eureka Creek.

riffles were installed. Powered by a Caterpillar 3306 diesel engine, the Morris 10 by 8-inch pump was capable of pumping 2000 igpm. The operation processed around 200 yards per hour. Final cleanups were dealt with using a two-hutch jig and portable long tom. In 2001, Troy Cahoon and Hiro Miyahama used a conventional triple run sluice with a Morris 10 by 10-inch pump, powered by a Caterpillar 3406 diesel engine, capable of 2000 igpm. With this equipment they were able to process about 75 to 100 yards per hour. Final cleanups were actually done off site by Don and Rose Kenzie at their facility in the Callison Industrial subdivision using jigs and a vibrating Diester table.

GROUND DESCRIPTION During 1999 and 2000, Eureka Creek was diverted to the right limit of the valley and the creek and bench area mined. This turned out to be very deep ground where the overburden varied from 75 feet of frozen black muck to 25 feet. The pay gravels, once accessed, also were divergent, measuring at times 5 feet, while other areas yielded a 15-foot layer for sluicing. The 2001 season saw the operators mining the side pay to avoid the overburden depths previously encountered. Consequently, the sluice section was between 5 and 10 feet of gravels and the waste section was a maximum of 25 feet.

MINING CUTS In 1999 and 2000, four huge pits measuring 400 by 400 feet were mined basically from the right limit to the bench grounds moving over 300,000 cubic yards of material. This was cut back to five cuts in 2001 approximately 100 by 75 feet in size and concentrating on side pay only. While some stockpiled gravels were sluiced in 2002, the main work was restoration of old road to upper Eureka and some reclamation.

WATER SUPPLY AND TREATMENT This operation utilized out-of-stream settling ponds. An old mining cut near the mouth of Eureka was the final settling facility. Sending effluent down a right limit drain proved problematic as the flow tended to pick up mud and sediment from the bank. Diverting Eureka to the left limit within a kilometre of that facility soon corrected the problem and the operator has suggested a new location for the final restoration channel for the creek.

GOLD The gold recovered tended to be a mixture of coarse and fine particles with some nuggets. Purity of gold averaged about 730.

COMMENTS Reclamation at this operation has been progressive in nature, using the material from the next mine cut to backfill pits and re-contouring tailings as they are created.

EUREKA CREEK 115O/10

Eureka Placers Ltd 63° 35'N 138°52'W
Water Licence: PM97-039 1998, 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area **Site no. 68**

OPERATION/LOCATION Richard Allen and Don Marino continued to move upstream on the Right Fork Eureka Creek. Three miners were employed as well as one camp personnel in 1998-99 and approximately 800 hours sluicing was done each season. One 10-hour shift was worked daily. This was reduced in 2000 to two miners and one camp personnel, running 12-hour shifts and only 600 hours were spent sluicing. Limited stripping was performed in 2001 when the licences and approvals expired. Preparations were made to temporarily close down this operation and it moved to Montana/Stowe Creek. New water licences and Mining Land Use approvals have been issued for both this property and the Left Fork Eureka Creek but no work has been done under either.

EQUIPMENT/FUNCTION A Caterpillar D9G and two D8H Caterpillar bulldozers were employed to strip cuts and maintain settling facilities. A Caterpillar 900A and a 225 excavator were used to feed the trommel. Tailings were ramped with bulldozers.

WASH PLANT The pay gravels were fed into a hopper before being classified to minus ¾-inch, then into a 6-foot diameter trommel complete with scrubber. The material was then put through two 8-foot sluice runs lined with matting, expanded metal and 1 by 1-inch angle iron riffles. In 1998 and 1999, a Paco 8- by 6-inch pump, powered by a Cummins diesel engine delivered 1500 igpm. Approximately 30 yards were processed per hour. In 2000, the operator switched back to using a Morris pump, powered by a Caterpillar 3406 diesel engine capable of 2000 igpm and sluiced about 100 to 150 cubic yards per hour. Final cleanups were done with a long tom and table.

GROUND DESCRIPTION Twenty-five to 35 feet of frozen black muck overlies 5 to 6 feet of gravel and 5 feet of decomposed bedrock situated well below the water course. Some old workings were encountered. The gravel, plus 2 to 5 feet of the decomposed bedrock, was sluiced.

MINING CUTS In 1998, six cuts about 100 by 150 feet each were completed using an out-of-stream facility. In 1999, four cuts approximately 100 by 120 feet were mined. Sluicing for these two seasons was about 800 hours. In 2000, the operator moved upstream to nearly the top of the right fork and took out a mine cut about 600 by 90 by 35 feet deep, sluicing for approximately 600 hours. Although some stripping was done at this site, Mr. Allen and Mr. Marino moved to another location within the Dawson Mining District in 2001.

Eureka Placers on Upper Eureka Creek.

WATER SUPPLY AND TREATMENT Water from Eureka Creek, and from the Right Fork Eureka as the operation moved upstream, was contained in an in-stream pump pond managed with a water control box. Small in-stream settling ponds were constructed to contain effluent as the in-stream settling pond at the mouth of the Right Fork and Eureka Creek was filled in 1997 and a temporary diversion to the left limit was constructed and has been stabilized by operator. Negotiations to use a lower Eureka Creek settling facility owned by Star North were made in the event a high water event occurred.

GOLD The gold is very fine with a purity between 620 and 690.

RIGHT FORK EUREKA CREEK 115O-10

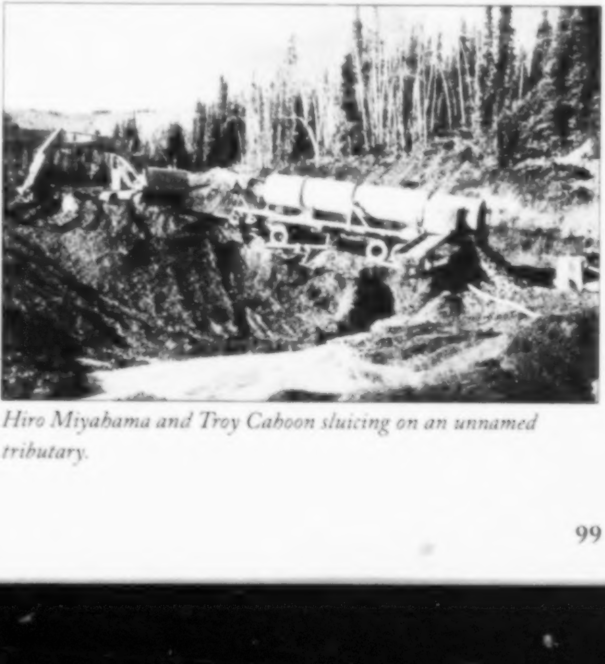
Hiro Miyahama	63°36'N 138°55'W
Water Licence: PM01-241	2002
Dominion-Sulphur Placer Area	**Site no. 69**

OPERATION/LOCATION Troy Cahoon and Hiro Miyahama, operating as Hamar Placers, mined on an unnamed left limit tributary of the Right Fork of Eureka Creek. Two miners worked one eight-hour shift daily.

EQUIPMENT/FUNCTION A D9H Caterpillar bulldozer with ripper was used to strip material and push pay. Shortly after startup in this first season, a 690B John Deere excavator was rented.

WASH PLANT The trommel was 5 by 40 feet with a 4 by 10-foot sluice run, lined with expanded metal and Nomad matting and contained 1½-inch Hungarian riffles. Final cleanups were performed by Don and Rose Kenzie at their Callison-site using a jig and a Diester table.

GROUND DESCRIPTION This was the initial year at the property. Stripping indicated approximately 15-feet of black muck



Hiro Miyahama and Troy Cahoon sluicing on an unnamed tributary.

overlaying unconsolidated, very fractured and decomposed bedrock. Six feet of broken bedrock was sluiced.

MINING CUTS One cut was mined that was 60 feet by 100 feet.

WATER SUPPLY AND TREATMENT Water was acquired from the tributary and settling ponds were constructed approximately 1200 feet upstream from the mouth.

GOLD Gold was coarse with some small nuggets and a bright yellow, high silver content. Fineness was about 685.

COMMENTS Generally, the operators were pleased with the initial gold recovery at this location.

RIGHT FORK EUREKA CREEK 115O/10

Ripper Mining, Hamar Placers	63°33'N 138°53'W
Water Licence: PM97-073, PM01-242	1998,2002
Dominion-Sulphur Placer Area	**Site no. 70**

OPERATION/LOCATION Troy Cahoon and A.J. Everton began preparing this unnamed right limit tributary of the Right Fork Eureka Creek in 1998. The initial water licence restricted this operator from obtaining water from the tributary or the Right Fork of Eureka unless flows were greater than 0.07 cubic metres per second in consideration of the adjoining placer miner. The operator had the opportunity to work with another miner using the name Star North on lower Eureka Creek and moved to that location in 1999. In 2001, Mr. Cahoon obtained a new water licence for this property without the water restriction. It will be mined with new partner, Hiro Miyahama, under the name Hamar Placers.

EQUIPMENT/FUNCTION A D8K Caterpillar bulldozer and Hitachi UH-7 excavator were employed for stripping and sluicing the test area during the initial approach. No equipment was moved to the site in 2002 in conjunction with the new water licence other than a D9H Caterpillar bulldozer used for building road access.

WASH PLANT A 30-foot trommel with a 5-inch water pump was intended for sluicing, but was not put into action. All testing was done with a long tom only.

GROUND DESCRIPTION The Right Fork of Eureka Creek is known to have 25 to 30 feet of black muck over 5 feet of gravels and 5 to 6 feet of decomposed bedrock. It is reasonable to assume that this tributary would have a similar composition. Test results were not definitive in this respect, but it is likely that the overburden will be less on the tributary.

MINING CUTS A large cut was opened up in 1998. Thawing black muck made stripping very difficult in this narrow valley. During the years that the property was abandoned, the creek channel has stabilized somewhat. In 2002, as part of another project to reach quartz claims at the top of this valley, a more permanent access road was constructed along the right limit and an area cleared for a camp location.

WATER SUPPLY AND TREATMENT It was intended to settle in a series of ponds to be constructed progressively using the previously mined pit. The creek was diverted into a gravelled channel which repeatedly filled with sediment from thawing black muck. New mining efforts will have to consider the feasibility of a more permanent and stable diversion to avoid this contingency, in the event the ponds are unable to settle out material prior to the point of compliance.

GOLD It is hoped that the gold will be similar in quality to that recovered by the other Hamar operation on a left limit tributary of Right Fork Eureka. The gold found there was coarse, nuggetty and a bright yellow in colour. Fineness in the Eureka valley usually ranges anywhere from 650 to 690.

INDIAN RIVER 115O/10

Aurion Placers	63°38'N 138°51'W
Water Licence: PM95-055	1998
Dominion-Sulphur Placer Area	**Site no. 71**

OPERATION/LOCATION 1998 was the last season for this operator to mine these Indian River placer claims located at the mouth of Eureka Creek as the lease agreement was not renewed by Tamarack Inc. John Loveless employed five mining and one camp personnel working two 12-hour shifts daily.

EQUIPMENT/FUNCTION One D10 and two D9L Caterpillar bulldozers were used for stripping and stockpiling pay gravels. The bulldozers were equipped with U-blades and single shank rippers. An EL300 Caterpillar excavator fed the sluice plant and dug ditches as required. To stack tailings and perform yard work, a Caterpillar 980C loader was employed. All equipment was used at various times for the purpose of restoration and reclamation.

WASH PLANT A 5 by 16-foot ELRUSS incline shaker plant fed, via a hopper, screened material to minus ¾ inch. Four 4 by 16-foot sluice runs were lined with unbacked Nomad matting and expanded metal. Halfway down the length of each sluice run, a short 4-foot section of 1-inch Hungarian riffles was installed. Powered by a Caterpillar 3306 diesel engine, the Morris 10 by 8-inch pump was capable of pumping 2000 igpm. The operation processed around 200 cubic yards per hour. Final cleanups were dealt with using a two hutch jig and portable long tom.

GROUND DESCRIPTION Overburden ranged anywhere from 2 feet to 12 feet in depth of frozen and partially frozen material. Gravels varied from a maximum of 10 feet to a minimum of 2 feet and were composed of both frozen and thawed sections. Bedrock was decomposed and contained some clay and bands of black, slabby schist extending right across the valley. The sluice section fluctuated between 6 and 10 feet and the waste section between 6 and 16 feet.

MINING CUTS Six mining cuts averaging 250 feet wide by 350 feet long were made out of which a total of 200,00 cubic yards were sluiced.

WATER SUPPLY AND TREATMENT Sluice water was acquired from the Indian River, 75% of which was recirculated in out-of-stream settling ponds built within previous era mining cuts at the mouth of Eureka Creek. The discharge of effluent into Indian River from the final settling facility was well below the allowable rate for settleable solids in this area.

GOLD The gold tended to be travelled, floury, smooth and bright. Some small nuggets were recovered as well as some nuggets with quartz attached. The fineness averaged 760.

COMMENTS Interestingly, absolutely no old workings, shafts or even bones were found in any of the overburden or gravels. As this was Aurion's last year, reclamation of most of the mined areas was completed, barring some tailings at the mouth of Eureka that Tamarack wished to use in the construction of their access, fuel storage and general camp layout.

Aurion Placers operation on Eureka Creek.

SULPHUR CREEK 115O/10

Henry O. Kruger	63°42'N 138°42'W
Water Licence: PM96-056	1998, 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 72**

OPERATION/LOCATION Mr. Kruger continued his one man operation on the right limit of Sulphur Creek valley, working an eight-hour shift daily. He has been mining this ground for over 25 years. His most recent location is between the dredge tailings and cutting into the far right bench.

EQUIPMENT/FUNCTION D9G and D7E Caterpillar bulldozers were used to strip overburden. A Koehring 605 dragline or a Komatsu 955 shovel were available to hoist material out of the mine pit. A Hough 120C loader, along with the bulldozers, was used to feed the sluice plant.

WASH PLANT In 1999, Mr. Kruger switched from using his Ross-type box to a 5 by 16-foot ELRUSS screen deck. The 4 by 6-foot deck fed into a distribution box divided into

Henry Kruger sluicing on Sulphur Creek.

two 4 by 15-foot sluice runs. The first 2 feet of run had 1-inch riffles while the remainder was expanded metal. An 8-inch Murphy pump, powered by a 6-71 General Motors diesel provided 2500 igpm. About 50 cubic yards were processed per hour which dropped to 40 to 45 cubic yards as the operator moved further into the bench. Cleanups were performed with a screen deck and wheel, drying the remainder and removing magnetite. A final spin in the wheel and the gold was relatively clean.

Ground Description Overburden consisted of frozen black muck to a depth of 14 or 15 feet. Gravels averaged 14 to 15 feet as well, with bedrock somewhere between 28 and 30 feet. The sluiced section averaged around 12 feet of gravels and 1 foot of decomposed bedrock. The 2001 and 2002 mine cuts were composed of larger, boulder-type material and slabby bedrock which caused a definite slow down in processing. Bedrock became progressively deeper in 2002 as Mr. Kruger worked into the hillside at 30 to 35 feet. The colouring changed to a slightly greenish tinge as the operation moved further into the bank.

Mining Cuts Mr. Kruger excavated one mine cut per year, all of which were approximately 150 by 150 feet to bedrock.

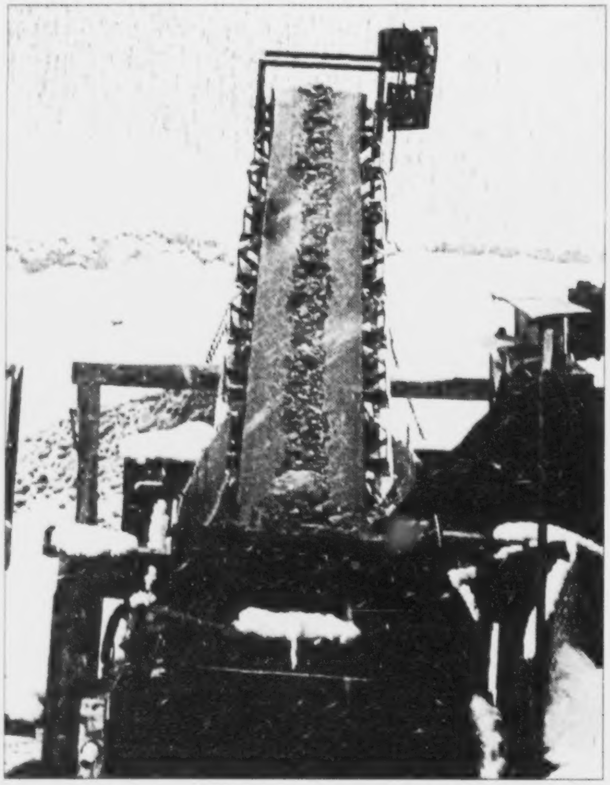
Water Supply and Treatment This is an out-of-stream operation acquiring water from Sulphur Creek or old tailings ponds. Groundwater has a tendency to seep into old mine cuts which can then be used as reservoirs. Previous year's mine cuts are used as next year's settling pond.

Gold The gold was very delicate and flaky with a fineness of about 820.

Comments Mr. Kruger, an excellent metal worker, applied his ingenuity to construct a double-walled mobile tank creating an easy-to-move, impervious secondary containment for fuel storage greater than 4000 litres. Reclamation at this mine site is progressive in nature.

SULPHUR CREEK	115O/10
Mary Ange Resources Ltd.	63°44'N 138°50'W
Water Licence: PM98-064	1998, 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 73**

Operation/Location Located upstream from the lower dredge on Sulphur Creek, Grant, Richard and Michael Klein moved an equipment/fuel storage area camp over from Gold Run Creek in order to mine the remaining virgin ground and re-mine old dredge tailings. In 1998, three miners began the work, with two camp personnel; in 1999 this increased to five miners, with six in 2000 and back down to five miners in 2001. Work shifts varied between 10 and 12 hours. The obligations for reclamation at this site were completed in 2002.



Mary Ange conveyor late season sluicing on Sulphur Creek.

Equipment/Function During the fall of 1997, two D9N Caterpillar bulldozers had been moved onto this property to strip the black muck overburden. A Caterpillar 637E scraper with push/pull front and rear engines was employed as well, removing the old surface tailings and constructing the dykes required for a settling pond. A Caterpillar 235 hydraulic excavator with a 42-inch dig bucket and a 72-inch cleanup bucket was added in 1998 to feed the sluice plant, along with a Caterpillar 245 back hoe to load the scraper. At various times throughout the mining, a Caterpillar D9N and a D9L bulldozer with multi-shank rippers, a D10N Caterpillar bulldozer with a single shank ripper and U-blade, and a Caterpillar 966D bulldozer with a 4 cubic yard bucket were used in various capacities. A 330BL Caterpillar excavator hoe with a 21-foot 4-inch boom and a 54-inch cleanup bucket was used in 1999 and 2001 to bail tailings ponds and load the scraper and the D300E Caterpillar haul truck.

Wash Plant A Hewitt Robbins screen deck and four sluice runs with 1-inch punch plate holes and lined with outdoor matting was powered by a D60P1 Caterpillar Olympian 3 phase generator, rated 54 kilowatts, producing 480 volts of electricity. An 8 by 10 Morris pump capable of 3500 igpm and powered by a 3406 Caterpillar diesel engine fed the hopper and conveyor belt. Approximately 126 cubic yards were sluiced per hour.

GROUND DESCRIPTION The Sulphur Creek valley is fairly wide and flat at this point. Overburden consisted of 30 feet of frozen black muck. An average of about 8 feet of pay gravels and 3 feet of rolling, decomposed bedrock were sluiced.

MINING CUTS In 1998, an estimated volume of 96,100 cubic yards of waste was mechanically removed, while hydraulic stripping removed about 50,000 cubic yards. 1999 saw a program of 32,000 cubic yards being hydraulically stripped and 242,777 cubic yards mechanically removed. In 2000, the figures remained much the same, with 204,843 cubic yards mechanically removed while hydraulic stripping accounted for 30,000 cubic yards. The operation wound down in 2001 to 92,500 cubic yards of waste being mechanically stripped. Mining claims 34 to 48 were mined consecutively, representing approximately 1.32 miles of ground out of which 395,205 cubic yards of pay gravels were sluiced.

WATER SUPPLY AND TREATMENT Mary Ange Resources Ltd. was licenced for in-stream and out-of-stream works. Water for sluicing was obtained from Sulphur Creek and an unnamed left limit tributary. When possible, the operators worked out-of-stream using old mine cuts for tailings as required. During low water, in-stream reservoirs were constructed. Recycle was 100% and the tailing ponds averaged about 1000 feet by 200 feet in size.

GOLD The gold recovered was very fine and a bright colour, most of which was plus 8 mesh. Some quartz was present and a few nuggets, some with quartz attached, ran about plus 10 mesh size. The fineness averaged 810.

COMMENTS Mining was completed at this site by August of 2001. Reclamation of most of the mined areas was done in the fall of 2001 and completed during the 2002 season. Lucky Lady Placers, the new owner of these claims, has undertaken to complete any outstanding reclamation works which include leaving a few areas open for further mining.

SULPHUR CREEK	115O/10
Lucky Lady Placers	63°44'N 138°51'W
Water Licence: PM00-181	1998, 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 74**

OPERATION/LOCATION Four miners and 3 camp personnel comprised this placer operation in 1998, which was reduced to three miners in 1999. One 10-hour shift was run daily. Located on the right limit of Sulphur Creek near its confluence with Brimstone Gulch, the property has been mined continuously since the early 1970s, started by Don Gibson and carried on by his son Lance, and partner Kris Kana. By 2002, only Kris Kana and Lance Gibson mined the property due to rising costs of production.

EQUIPMENT/FUNCTION Two D9 Caterpillar bulldozers were used to push material up to the loader, while a 245 Caterpillar excavator was employed digging drains, building berms and constructing roads. A 980C Caterpillar loader was used to feed the wash plant. A Gorman Rupp 10 by 10-inch pump manned an innovative, custom-built automatic monitor for hydraulic stripping.

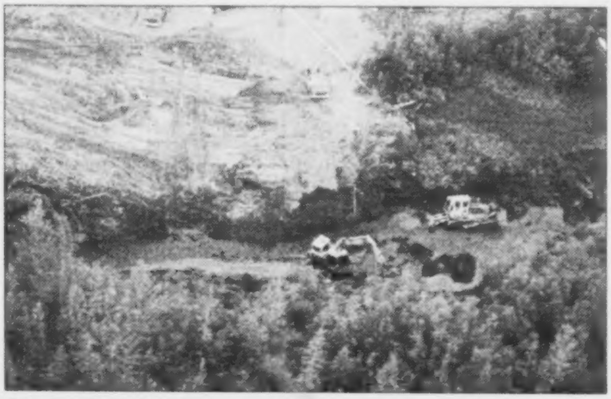
Lucky Lady's sluice plant on Sulphur Creek.

WASH PLANT This operation processed approximately 125 cubic yards per hour with a Cornell 6 by 8-inch pump, powered by a General Motors 671 diesel engine running anywhere from 1000 to 1200 igpm. The tailings stacker was 36 inches wide by 60 feet long and two sluice runs, each 4 feet wide by 20 feet long, were lined with expanded metal and Nomad matting. One half-inch minus classified pay gravels were sluiced. Material was delivered by a 60-foot by 46-inch wide conveyor feeding the 5-foot by 14-foot long double decker screen plant. During the 2002 season, sluicing was considerably reduced and only 70 cubic yards were processed per hour.

GROUND DESCRIPTION Thirty feet of black muck covered from 6 to 8 feet of normal creek gravels. Bedrock was unconsolidated Klondike schist, slab-like and chunky. Three feet of the bedrock and 6 feet of the gravels were mined.

MINING CUTS A cut approximately 310 feet by 400 feet was mined in 1998, while two cuts 150 by 150 feet and 300 by 300 feet were excavated in 1999. In 2000 and 2001, one cut was mined each season, averaging about 300 by 340 feet in size. 2002 saw only one cut, measuring 200 by 300 feet in size.

WATER SUPPLY AND TREATMENT Under Water Licence PM95-097, a community settling pond was included for use by a number of Sulphur Creek miners. Mr. Gibson acquired the claims upon which the settling ponds were constructed in 2000 for the exclusive use of Lucky Lady Placers due to the downturn in placer mining activity. This operation utilized an out-of-stream recycling system for its sluicing and monitoring programs. Effluent was conveyed downstream, using a combination of the creek and a ditch located on the right limit of Sulphur, to three large settling ponds built from dredge tailings. These ponds measured 1500 by 2500 feet in total. When necessary, an on-site reservoir pond about 500 by 50 feet was dyked off in order to have a sufficient amount of clean water for monitoring.



Sulphur Gold Placers excavating new cut.

GOLD Gold has a fineness of 800 and very small particle size, some of which is almost powdery in nature. Mesh sizes range from -20 to -150. Final cleanups are done with a double two stage jig, a gold wheel and table.

COMMENTS Lucky Lady Placers uses most of the material generated by mining for the construction of roads, dikes and water structures. A small amount of overburden is stockpiled but it is noted that the tailings have sufficient fines to revegetate fairly quickly once the contouring and sloping has been done. In 2002, all of the strippings from the new mine cut at Brimstone Gulch were hauled to an old cut which was filled in. Old mine areas above camp have been cleaned up and eroding pit walls stabilized.

SULPHUR CREEK	115O/10
Sulphur Gold Placers	63°47'N 138°54'W
Water Licence: PM99-125	1998, 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 75**

OPERATION/LOCATION This is the first active operation on the right limit of Sulphur Creek downstream from its confluence with Green Gulch. Mark and his brother, Paul Peirson have carried on the family placer mining business from their father Bud Peirson, working one 10-hour shift daily. In 2002, the property was optioned to Joel White of Coulee Resources. Paul Peirson remained on-site working for Mr. White.

EQUIPMENT/FUNCTION One D8K Caterpillar bulldozer with U-blade and ripper was used interchangeably with a D7 Caterpillar dozer to strip and stockpile pay gravels for the Hyhoe 1 yard bucket excavator. The excavator fed the pay gravels to the trommel. A hydraulic monitor was run by an 8 by 10-inch pump with a 3208 Caterpillar motor.

WASH PLANT A ⅝-inch screen trommel was powered by a 75 kilowatt power plant measuring 5 feet in diameter attached to two 12-foot sluice runs dropping from 1½-inch to 1 foot. Water was supplied by a Flygt 6-inch pump, powered by the 75 kilowatt Gen Set, capable of pumping 1600 igpm. About 60 cubic yards were processed per hour.

GROUND DESCRIPTION Overburden and frozen black muck can range from as little as 15 feet deep to 50 feet deep in this area of Sulphur Creek. Decomposed animal remains have been uncovered in the permafrost and lots of old workings are evident in gravel layers. Mining was conducted both below and above the water course and there is considerable clay content. About 5 feet of combined pay gravels and unconsolidated bedrock were processed.

MINING CUTS In 1998, a cut approximately 300 by 75 by 25 feet deep was excavated. Three separate cuts were done in 1999 totalling approximately 12,000 cubic yards. An additional three cuts were mined in 2000, and in 2001, a 50-foot wide by 800-foot long, 15-foot deep area was excavated out of which approximately 7000 cubic yards were sluiced.

WATER SUPPLY AND TREATMENT Up to the year 2000, Sulphur Gold Placers was part of the group of operators who participated in the use of a community settling pond constructed in old dredge tailings. The creek was used as a conduit to transport effluent down to these ponds, with each operator informing the upstream user when clean water was required for hydraulicing or sluicing. In 2000, these claims were acquired by one owner on Sulphur Creek. On-site settling facilities were required from that time on.

GOLD The gold at this site is very fine with only 3 or 4 ounces per year of coarse gold content. Mesh size is about minus 60% and the colour is dull with some black and red staining. Cleanups are performed with jigs.

SULPHUR CREEK	115O/10
Coulee Resources	63°48'N 138°54'W
Water Licence: PM99-125	2002
Dominion Sulphur Placer Area	**Site no. 76**

OPERATION/LOCATION Joel White of Coulee Resources optioned this ground from Mark and Paul Peirson. The property is located just downstream from Green Gulch. A mobile camp was put together at Meadow Gulch. Mr. White was previously mining on Black Hills Creek and continued to do some work there as well. Seven miners and two camp personnel put in two 12-hour shifts per day.

EQUIPMENT/FUNCTION The operation intended to complete mining on this ground during the 2002 season. A D8L and a D9H Caterpillar bulldozer as well as a Komatsu D455A were used to strip off the overburden. Excavators included a Komatsu PC200, LC5, PC400 and a 992 John Deere. Partway through the season, a PC1000 was purchased with 48-inch "superwide" pads and a 6 yard bucket, one of the largest excavators to work in the Klondike placer area.

WASH PLANT An ELRUSS 6 by 16-foot inclined double screen deck wash plant was employed, with four 4 by 16-foot oscillating sluice runs, lined with Nomad matting and No. 8 expanded metal. The angle was 1½-inch per foot of grade. The plant was run by a Gorman Rupp 10 by 12-inch pump, powered by a Caterpillar 3406 diesel engine, capable of approximately 1800 igpm. Approximately 150 cubic yards were processed per hour.

GROUND DESCRIPTION An average of 25 feet of black muck overlays a 4-foot bed composed of small, rounded and washed gravels. The bedrock was soft and decomposed unconsolidated schist which ranged in colour from an orange colour (where the gold was found) interspersed by blue grey colour (no concentrates whatsoever) reefs. Both the 4-foot bed of gravel and 2 feet of orange coloured bedrock were sluiced.

Al Rothwell stands beside a PC1000 Komatsu 6 cubic yard bucket.

MINING CUTS Three cuts were completed in the 2002 season. Dimensions were 1800 by 120 feet, 1100 by 120 feet and a 700 by 80-foot pit. There is some material left to be sluiced in 2003.

WATER SUPPLY AND TREATMENT Water acquisition was from Sulphur Creek and a 400 by 100-foot out-of-stream settling pond was used to treat effluent. The pond spillway entered into an old dredge area and virtually no water was returned to the creek. Water was accumulated in a reservoir pond and approximately 60% was recycled.

GOLD The gold was generally very fine with a few dendritic crystalline nuggets. Fines were from 79 to 80. Cleanups were performed every 80 hours by jigging, screening to four sizes and run over a Diester table. An average cleanup was comprised of about 129 ounces at -30 mesh, 112 ounces at -20 mesh, 26 ounces at -10 mesh, 12 ounces at +10 mesh and between 1 to 2 ounces of a +4 size.

SULPHUR CREEK	115O/10
Neils Sprokkreeff	63°50'N 138°56'W
Water Licence: PM96-070, LP00152	1998
Dominion-Sulphur Placer Area	**Site no. 77**

OPERATION/LOCATION Mr. Sprokkreeff mines upper Sulphur Creek, above Green Gulch. The last sluicing season he had was in 1997. In 1998, he did some work on the Community Settling Pond, but no mining was done. For the past few seasons, Mr. Sprokkreeff has been operating equipment for other miners.

EQUIPMENT/FUNCTION To build the new settling pond cell, the operator used a D9 Caterpillar bulldozer and two Caterpillar 980 excavators at various times.

WASH PLANT No sluicing or mining was reported for the period of this publication.

GROUND DESCRIPTION The area of the settling pond is composed of old dredged tailings with medium to large bouldery gravels. As there can be as much as 60 feet in depth, they make an ideal medium for settling silt-laden waters prior to re-entering the creek. At the same time, the silt and other material adheres and eventually covers the gravel enhancing the ability of the area to revegetate.

MINING CUTS As mentioned, the only work reported was the construction of an additional cell to the community settling pond, bringing the total number to three. The approximate size of this new area was 500 by 800 by 20 feet in depth, greatly increasing the capacity for the upstream miners on Sulphur Creek.

WATER SUPPLY AND TREATMENT In a typical mining season, Mr. Sprokkreeff would run effluent downstream to community settling ponds using the creek as a conduit. As no mining was done during community settling, no water supply or treatment was used. By the end of the 2000 season, Mr. Sprokkreeff elected to sell the claims upon which the ponds were situated and the community pond agreement was cancelled. Consequently the five or six miners who previously used this pond had to re-think their mining plans and settle on their own ground.

GOLD Past gold recovered at this operation was angular and had a fineness of 780.

COMMENTS Typical of several operations in the Yukon, as fuel prices climbed and gold market value did not, this miner was forced to seek employment offering a guaranteed income.

DOMINION CREEK 115O/10

Gatenby Mining Services, Balner Enterprises Ltd.	63°39'N 138°39'W
Water Licence: PM99-086	1998, 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 78**

OPERATION/LOCATION Lisle Gatenby mined an area of Dominion Creek upstream from its' confluence with Sulphur Creek. This area of the Dominion Creek valley was approximately 2500 feet wide with a relatively low slope. Three miners worked the property covering a total of 18 hours per day in 1½ shifts.

Gatenby Mining Services sluice plant on Dominion Creek.

EQUIPMENT/FUNCTION Two Caterpillar bulldozers, models D9L and D8H, a John Deere model 844 loader and two Hitachi excavators, models EX200 and EX400, were used to mine the site. The loader had a 5½ cubic yard bucket, the EX200 had a ¾ cubic yard bucket and the EX400 had a 1½ cubic yard bucket.

WASH PLANT The wash plant consisted of a feeder which included a conveyor that fed material to the double deck screen. The screen decks were made of rubber-coated steel. The top deck had 1-inch holes and the bottom deck had ½-inch holes. Coarse tailings left the plant and were stacked via another conveyor. Recovery was in vibrating trays. The processing rate was 150 loose yards per hour. Process water was supplied at a rate of 2500 igpm by an 8 by 10-inch Berkley pump powered by a Cummins engine.

GROUND DESCRIPTION The operation encountered 10 feet of silt or peat over 10 feet of Dominion Creek gravel, over 10 feet of White Channel gravel on decomposed schist bedrock. The total depth to bedrock was 30 feet. The whole section was frozen. Both the White Channel and the Dominion gravel were unsorted with a lot of tight framework. There were some big quartz boulders. The White Channel gravel contained kaolinite clay. The schist bedrock also had shattered quartz veins. The sluice section consisted of 4 to 7 feet of White Channel gravel and 2 feet of decomposed schist bedrock.

MINING CUTS In 1998, development work was conducted at the site. This work included drain and diversion channel construction and stripping of blocks to be mined from 2000 to 2002. In 1999, work started in 1998 was continued. Construction of the sluice plant was also done in 1999. In 2000, plant construction was completed and two mine cuts were processed. One was 450 feet by 200 feet and the other was 100 feet by 100 feet for a total of 27,000 cubic yards. In 2001, three cuts were processed. The first had an area of 450 feet by 150 feet, the second 200 feet by 150 feet and the third 250 feet by 200 feet. The total cubic yardage processed was 30,000. In 2003, another 3 cuts were processed. The area of these cuts was 200 feet by 100 feet, 300 feet by 150 feet and 100 feet by 100 feet. A total of 27,000 cubic yards were processed.

WATER SUPPLY AND TREATMENT The operation was able to utilize ground water for sluicing. A recycle rate of up to 100% was accomplished with settling occurring in old mining blocks.

GOLD The purity of gold at this site was 860 fine. The majority of the gold was between 10 and 100 mesh with less than 1% greater than 10 mesh.

COMMENTS Reclamation was being addressed by using mined-out cuts as settling ponds and then back-filling into them.

DOMINION CREEK 115O/10

Gimlex Gold Mines	63°40'N 138°38'W
Water Licence: PM96-050	1998, 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 79**

OPERATION/LOCATION This operation is located on Dominion Creek between Gold Run and Sulphur creeks. With the exception of 2000 when four miners worked the site, six miners were employed. One 12-hour shift was worked per day.

EQUIPMENT/FUNCTION The equipment used to mine this site included four Komatsu bulldozers, one model D475, two D355s and one D155. There were also two Komatsu model WA 600 loaders, one Komatsu model PCL400 excavator and one Caterpillar model 235 excavator. The equipment was used for stripping overburden and mining. The loaders were used to feed the wash plant and remove tailings.

WASH PLANT Pay was processed using an ELRUSS feeder with two conveyors and a 4-foot by 16-foot screen deck on a custom built wash plant. The 4000 to 5000 igpm of water required was supplied using a 10 by 12-inch Morris pump, powered by a Caterpillar 3406 engine. From 1998 to 2000, the processing rate ranged from 100 to 250 loose yards per hour. In 2001 and 2002, the processing rate was from 175 to 250 loose yards per hour.

GROUND DESCRIPTION The operators encountered frozen gravels from 3 to 12 feet thick, overlain by 40 to 60 feet of frozen black muck and sandy muck, possibly loess. The sluice section included the gravel and 1 to 2 feet of decomposed bedrock. The black muck and loess were waste.

MINING CUTS From 1998 to 2000, one cut was mined each season. The cut sizes, in order by year, were 750 feet by 250 feet, 900 feet by 250 feet and 600 feet by 250 feet. In 2001, two cuts were mined each having an area of approximately 7000 square metres. In 2002, one cut of 13,500 square metres was mined.

WATER SUPPLY AND TREATMENT In the 1998 mining season, process water was obtained from a drainage ditch from the upstream operation, Ross Mining Ltd. The ditch was extended to bring water to within 500 feet of where it was required. Effluent was treated in a 600-foot by 200-foot pond. Re-circulation of approximately 50% of the water ensured an adequate supply. In 1999 and 2000, runoff and seepage filled the re-circulation pond. Effluent was settled out-of-stream in a 700-foot by 200-foot settling area. There was 100% re-circulation of the water. In 2000 to 2002, run-off, seepage and snow-melt were collected by means of ditches in the re-circulation ponds. Previous years' cuts with a total area of 11,000 square metres were used to attain 100% re-circulation.

GOLD Ninety-nine percent of the gold recovered was finer than 12 mesh, although occasional small nuggets were recovered. The gold was bright and had a reported fineness of 850.

COMMENTS Concentrates from the wash plant were cleaned up daily. They were first processed through a home-made mini-screen plant which screened the material to minus 12 mesh which was then directed through a long tom, and plus 12 was collected and run through a jig. The minus 12 mesh fraction was then cleaned on three 3-foot diameter wheels.

Tailings were used to reclaim old works, fix roads, stabilize slopes, to prepare re-circulation ponds for future mining and prepare set-ups for the sluice plant. Black muck and sandy overburden stockpiles have been set aside for contouring and reclamation when mining is completed. The northeast end of the cut was stabilized and contoured adjacent to the main public road. This reclamation work was extended west for about 1500 feet along the north edge of the mining area in 2002.

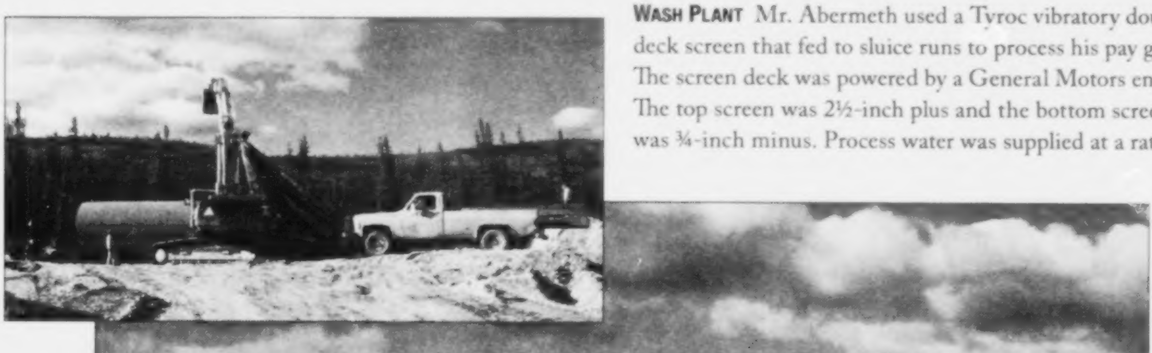
UNNAMED TRIBUTARY OF DOMINION CREEK 115O/10

George Abermeth	63°41'N 138°35'W
Water Licence: PM98-072	1998, 1999
Dominion-Sulphur Placer Area	**Site no. 80**

OPERATION/LOCATION Gyppo Mining Ltd. continued mining on this unnamed left limit tributary of Dominion Creek downstream from Rob Roy Creek. The tributary is commonly referred to as Lee Pup or Gyppo Creek. In 1998, the crew was reduced to four from the six miners employed in 1997. In 1999, three miners worked the site. Miners worked 11 hours per day. In 2000, Mr. Abermeth began work to shut down this operation. Closure work is expected to take approximately two years.

EQUIPMENT/FUNCTION The equipment and its usage was unchanged from previous years. The equipment used was a Komatsu model 355 bulldozer, a Caterpillar model D8 bulldozer, a Hein Werner model C-24 excavator and a Caterpillar 966C loader.

WASH PLANT Mr. Abermeth used a Tyroc vibratory double deck screen that fed to sluice runs to process his pay gravels. The screen deck was powered by a General Motors engine. The top screen was 2½-inch plus and the bottom screen was ¾-inch minus. Process water was supplied at a rate of



Gimlex conveyors feeding wash plant. (inset) Gimlex relocating fuel tank liner.

George Abermeth's mine site in 1998. The creek flows along the right limit edge of the valley to back of the photo.

1400 igpm using a 12 by 10 pump powered by a 6-71 General Motors engine. The sluice rate was from 60 to 80 loose yards per hour. A Spriggs Jig was used to process concentrate.

GROUND DESCRIPTION During the 1998 mining season, the operation removed from 20 to 30 feet of frozen black muck to reach a 2-foot gravel layer which lay on decomposed bedrock. The sluice section consisted of the gravel and from 2 to 4 feet of bedrock. In 1999, the frozen black muck layer reduced to 15 to 20 feet and the gravel layer was from 1 to 2 feet deep. The sluice section in 1999 was the gravel and 2 to 3 feet of the decomposed bedrock.

MINING CUTS Two cuts were mined in 1998. One 100 yard by 80 yard cut was mined in 1999.

WATER SUPPLY AND TREATMENT This operation recirculated process water to attain an adequate water supply. Water was pumped upstream to the cut from what had been a mine cut on the left limit side of Dominion Creek put in by a neighbouring miner.

GOLD Fineness of the gold recovered from this creek is reported to be from 880 to 900 with 5% being coarse grained.

COMMENTS Poor metal prices and depletion of reserves at the site led to the reduction in the crew size and eventual mothballing of this operation.

DOMINION CREEK	115O/10G
Adrian Hollis	63°41'N 138°36'W
Water Licence: PM97-047	2001, 2002
Dominion-Sulphur Placer Area	**Site no. 81**

OPERATION/LOCATION Adrian Hollis mined an area of Dominion Creek near the mouth of an un-named left limit tributary commonly referred to as Gyppo Creek. Mr. Hollis started working at this site in September of 2001. In the first season, he worked on his own and in 2002 he worked with one employee. There were approximately 50 sluicing days in the 2002 season.

EQUIPMENT/FUNCTION A PC400 Komatsu excavator was used to mine the property. In 2001, a D9H Caterpillar bulldozer and a 25-ton Moxy rock truck were leased from Ross mining for approximately one week. The rock truck was used to construct dykes and address reclamation in areas of a previously mined cut which were not needed for Mr. Hollis' work. In 2002, the D9H was leased again for approximately 10 days to rip frozen ground.

WASH PLANT The wash plant was a screen deck equipped with New Zealand-style hydraulic riffles. Process water was obtained at a rate of 600 igpm to process 100 to 120 loose yards per hour. Clean-ups were completed using Ross Mining's clean-up equipment.

GROUND DESCRIPTION The average depth of the ground was 17 to 20 feet. The section was made up of mud over 2 to 4 feet of Dominion gravel. The sluice section was the 2 to 4 feet of gravel and up to 2 feet of chlorite schist bedrock. The area being mined was a perched bench at the edge of the Dominion flood plain. The bedrock was elevated slightly relative to surrounding bedrock.

MINING CUTS In 2001, the cut processed was 50 feet by 100 feet in area. In 2002, an L-shaped pit was mined. It had an average width of 50 feet and was approximately 200 feet long.

WATER SUPPLY AND TREATMENT Water was pumped directly from Dominion Creek. In 2001, settling occurred in an area previously mined by Ross Mining Ltd. In 2002, process water for the first portion of the cut was settled in the same area as in 2001. After this, primary settling occurred in areas mined by Mr. Hollis, with final settling in the Ross Mining cut.

GOLD The gold recovered was fine-grained. It had a purity of 860 fine.

COMMENTS Reclamation was addressed as mining progressed.

DOMINION CREEK	115O/10G
Ross Mining Ltd.	63°41'N 138°36'W
Water Licence: PM97-047	1998, 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 82**

OPERATION/LOCATION Norman Ross' operation on Dominion Creek was located near the confluence with Gold Run Creek. The Dominion Creek valley in this area is relatively wide and flat. In 1998, this operation employed eight miners and

Ross Mining Ltd.'s processing plant on Dominion Creek near Rob Roy Creek in the Dawson Mining District.

four camp personnel and ran one 10½-hour shift per day. In 1999, there was an additional camp employee. In 2000, the crew size and the number of shifts varied depending on the stage of the operation. There were six to nine miners and two to four camp employees. The operation ran either one or two 10-hour shifts per day. In 2001, the operation increased the number of miners to 14 while the camp crew was two. Two 10½-hour shifts were worked each day. The crew increased again to 16 miners and three camp personnel, again working two 10½-hour shifts per day.

EQUIPMENT/FUNCTION In 1998 and 1999, two excavators, one a Caterpillar 245 and the other an Hitachi EX1100, three Caterpillar bulldozers, models D10L, D9L and D8L, three 60-ton Terex 3309 trucks, two Caterpillar loaders, models 988 and 992, and one Caterpillar 16G grader, were used to mine this site. In 2000, a Caterpillar D9L bulldozer and a Komatsu PC400 excavator were added. In 2001, a Caterpillar D10N was added. In 2002, two 40-ton trucks were added.

WASH PLANT A hopper and conveyor which fed a 6-foot by 20-foot double deck screen deck which in turn fed to six oscillating sluice runs were used to process pay gravel. There were 300 feet of 42-inch wide conveyor. The sluice runs were 26 feet wide. The processing rate varied widely. The overall range of rates was from 225 to 400 cubic yards per hour. As the processing rates varied so did the water use rates. It varied over the five years from a minimum of 2000 to a maximum of 6000 igpm. The water was supplied to the plant using a 12 by 14-inch Berkley pump powered by a Cummins diesel engine.

GROUND DESCRIPTION In 1998, the stratigraphic section encountered was 6 to 10 feet of black muck over 8 to 12 feet of Dominion gravel and sand which was over 10 to 15 feet of White Channel. The waste section was 24 to 28 feet of gravel and muck. The sluice section was composed of 4 to 8 feet of White Channel and 2 to 6 feet of bedrock. In 1999, the overall depth was made up of 8 to 12 feet of black muck and sand over 10 to 15 feet of Dominion gravel which was over 10 to 14 feet of White Channel. The operation sluiced 4 to 8 feet of the White Channel and 2 to 5 feet of bedrock after removing 25 to 28 feet of muck and gravel. In 2000, the muck layer varied from 5 to 15 feet. The sand was 2 to 5 feet deep. The red-coloured Dominion gravel and the White Channel were 5 to 10 feet deep each. Four to 10 feet of White Channel gravel and 2 to 6 feet of bedrock were sluiced. In 2001 and 2002, the stratigraphic section was composed of 6 to 14 feet of muck, 2 to 8 feet of sand, 6 to 12 feet of red gravel and 8 to 12 feet of White Channel gravel. The bedrock was a green chlorite schist. The average depth to bedrock was 34 feet. In 2001, the sluice section was 4 to 8 feet of White Channel and 3 to 6 feet of bedrock. The sluice section in 2002 was 4 to 5 feet of White Channel and 2 to 3 feet of bedrock.

MINING CUTS In 1998, two cuts were mined, one approximately 180,000 square feet and the other approximately 260,000 square feet. In 1999, one cut of 650,000 square feet was mined. In 2000, the one cut mined was 850,000 square feet. In 2001, one cut of approximately 900,000 square feet was mined. The cut mined in 2002 was 1,080,000 square feet.

WATER SUPPLY AND TREATMENT This operation used a closed re-circulation settling system. Usually 100% re-circulation was achieved. However, at times it was necessary to have some level of discharge from the system, most often when excess water entered the system due to heavy rainfall.

GOLD The fineness of the gold from this site has varied from year to year. In 1998, it ranged from 830 to 860. In 1999, it was 840 to 860. In 2000, the range was 845 to 875. In 2001, it ranged from 882 to 885. In 2002, the purity of the gold dropped back down to 835 to 860 fine. It was described as fine and rugged with 50% smaller than 50 mesh.

COMMENTS As cuts are mined-out they are reclaimed first by using them as settling ponds, then by placing material stripped from subsequent cuts in them and finally they are sloped and overlain with topsoil. This operation has been an industry leader in placer mining practices and was awarded the first Robert E. Leckie award for Long Time Achievement in Mine Reclamation in 2001.

GOLD RUN CREEK 115O/10G

Mary Ange Resource Ltd. 63°42'N 138°38'W
Water Licence: PM98-020 2001, 2002
Dominion-Sulphur Placer Area **Site no. 83**

OPERATION/LOCATION Grant, Richard and Michael Klein commenced their mining at this location in 2001. A camp located on the site served as their base camp while mining on Sulphur Creek prior to working here. The valley is fairly wide and flat. Areas of this property have been hand, dredge and bulldozer mined previously, with the most recent prior activity by Teck Mining Group Ltd. This operation employed seven miners and one camp worker, covering two 10-hour shifts per day. In 2002, there were three miners, five employees and one camp worker. Two 10- to 12-hour shifts were worked each day.

EQUIPMENT/FUNCTION In 2001, the operation utilized two Caterpillar bulldozers, models D10N and D9N, both equipped with U-blades and rippers. The D9N had a multi-shank ripper while the D10N was equipped with a single shank ripper. Also used were one Caterpillar 966 loader with a 3-yard bucket, one Caterpillar 637E scraper, and a Caterpillar 330B excavator. The loader had a 4 cubic yard bucket. The excavator had a 54-inch cleanup bucket. Some of the waste overburden was hydraulic stripped using a 10- by 8-inch Morris pump. In 2002, the scraper was not used but an MT36 Moxy truck was added. A 6- by 8-inch Cornell pump, powered by a Caterpillar 3206 engine, was used for hydraulic stripping. The pump rate was 2500 igpm.

WASH PLANT The wash plant consisted of a hopper with belt-feeder which fed onto a Hewitt Robbins screen deck with 1-inch punch plate holes. The screen deck fed into a sluice box with three sections of runs, two 4-foot wide by 18-foot long runs equipped with riffles and 3 runs equipped with expanded metal. Power for the wash plant was supplied by a D60P1 Caterpillar Olympian generator. Water was supplied to the plant using an 8 by 10-inch Cornel pump, powered by a Caterpillar 3406 engine, at a rate of 3500 igpm to process 188 loose yards per hour. The process rate in 2002 was 143 loose yards per hour.

GROUND DESCRIPTION The stratigraphic section was 30 feet of muck over 8 feet of pay gravel. Mining also occurred in an area which had been previously dredged from 1914 to 1923. The sluice section was 10 feet deep. In 2002, overburden consisted of 25 feet of frozen black muck. There were many old workings encountered. The average depth of pay dirt was 5 feet. The operation sluiced the pay gravel and 3 feet of rock. The pay gravel was mixed with black mud. The black mud had approximately 10 to 20% pay gravel that had either been left by the dredge or was spillage from the dredge buckets.

MINING CUTS Five cuts were mined in 2001. They varied in size from 200 feet by 150 feet to 500 feet by 150 feet. The total volume sluiced in 2001 was 28,600 cubic yards over 240 hours. Of the total 170,000 cubic yards of waste material removed, 120,000 cubic yards were removed by hydraulic stripping. In 2002, one cut mined in the previously dredged area was 150 feet by 1300 feet with a total of 50,064 cubic yards of pay gravel sluiced. A second cut in virgin ground was 40 feet by 250 feet.

WATER SUPPLY AND TREATMENT Water was obtained and treated in two out-of-stream ponds. One was 600 by 400 feet and

Mary Ange Resources using an hydraulic monitor in the Gold Run Creek valley during the 2001 mining season.

the other was 800 by 900 feet. In 2001, there was no effluent discharge from the operation to Gold Run Creek. In 2002, water was obtained from Gold Run Creek and from an unnamed tributary to Gold Run. During low water periods, in-stream reservoirs were constructed. No settling took place in-stream. The settling pond was 1000 feet by 300 feet and 100% of process water was recycled.

GOLD The gold was described as 90% fine-grained and 10% small nuggets which were bright, round and chunky. There was some quartz present in the gold. The nuggets recovered were not bigger than 10 mesh in size. Some were crystalline. The fineness was 850.

GOLD RUN CREEK 115O/10H

Ray Lizotte and Brent Construction Inc.	63°43'N 138°41'W
Water Licence: PM99-128	1999, 2000
Dominion-Sulphur Placer Area	**Site no. 84**

OPERATION/LOCATION This operation was located at the mouth of Laskey Pup which is a right limit tributary to Gold Run Creek approximately 3 miles from the confluence with Dominion Creek. The average valley width at this location was 1200 feet. The operation utilized a pond left by Teck Mining Ltd. for water acquisition and settling. There were two miners employed, working one 12-hour shift per day.

EQUIPMENT/FUNCTION Two Caterpillar bulldozers with rippers, models D9H and D8K, were used to strip black muck. The D8K was also used to push pay gravel to a Caterpillar 235 excavator which fed the wash plant. A Caterpillar 980 Loader with an 8-yard bucket was used to remove tailings. A Caterpillar 988 loader was added in 2000. An automated monitor was also used to strip the frozen black muck overburden.

WASH PLANT In 1999, the wash plant consisted of a 16-foot by 18-foot hopper with a belt feeder which dumped into a 4-foot diameter trommel equipped with hydraulic riffles set at a slope of 1-inch per foot. This plant processed from 32 to 50 loose cubic yards per hour. In 2000, a Super Sluice plant with hydraulic riffles was used to process 100 to 150 loose yards per hour.

GROUND DESCRIPTION The miners encountered 35 feet of frozen black muck which covered 1 foot of gravel. The bedrock was sloped and wavy. The gravel and 3 feet of bedrock were sluiced.

MINING CUTS The operation sluiced 4052 cubic yards in one cut in 1999. In 2000, one 400-foot by 400-foot cut was mined, with 30,000 cubic yards sluiced.

WATER SUPPLY AND TREATMENT A pond 2000 feet long by 300 feet wide was used for water acquisition and settling.

The automated hydraulic monitor used at Laskey Pup on Gold Run Creek by Ray Lizotte and Brent Construction.

The operation recirculated 100% of process water. A 10 by 12-inch Morris slurry pump powered by a 3408 Caterpillar engine pumped up to a maximum of 4000 igpm.

GOLD The gold recovered was approximately 80% fine-grained and 20% coarse-grained. The purity of gold from this creek is typically 830 to 878.

COMMENTS Approximately two-thirds of the area showed evidence of earlier hand working.

GOLD RUN CREEK 115O/10

D & P Mining Exploration Ltd.	63°44'N 138°42'W
Water Licence: PM99-065	1998, 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 85**

OPERATION/LOCATION Dan and Peggy Cuevas continued mining this property located approximately 5 miles up Gold Run Creek from its confluence with Dominion Creek. The operation employed two miners working one 10-hour shift per day.

EQUIPMENT/FUNCTION A Caterpillar D9G bulldozer equipped with a ripper and U-blade was used to rip and push frozen mud overburden and stockpile pay gravels. A Caterpillar 235C excavator with a 3.5 yard bucket was used to dig drains, cleanup bedrock pay-dirt and feed the sluice plant. A Caterpillar 966C loader with a 4-yard bucket was used to remove and stockpile tailings.

WASH PLANT No sluicing was performed in the 1998 mining season. In 1999, a new sluice plant was put into use. The new wash plant consisted of a 4-yard hopper with a belt feeder which fed to a 4-foot by 10-foot double screen deck. The screen deck classified material to 5/16 of an inch. The larger material was processed in a 3-foot by 20-foot sluice run set at a slope of 2.5 inches per foot and equipped with expanded metal and Nomad carpet. The majority of the gold recovered in the run, classified to 5/16-inch minus, was processed through two in-line 4-foot by 4-foot jig cells. In 1999, the 400 igpm of water used to process the 35 loose yards per hour of material which went through the plant was supplied by a 10 by 12 Worthington pump, powered by a Caterpillar 3208 engine. Water was supplied in 2000, 2001 and 2002 by a 12 by 12 Pumpmaster pump powered by a Deutz engine.

GROUND DESCRIPTION The stratigraphic section of this property in the area currently being mined consisted of 35 to 40 feet of mud above 2 to 5 feet of gravel. The composition is uniform and frozen with particle sizes ranging from small-grained through sand and gravel to rocks with a diameter from one to two feet. The rocks were mostly quartz. The material was over wavy blue and green bedrock which was fractured and decomposed. The sluice section consisted of an average of 3 feet of gravel along with 3 feet of decomposed bedrock.

Dan and Peggy Cuevas' operation on Gold Run Creek in 2000.

MINING CUTS In 1998, the operators worked at stripping two cuts. One was 250 feet wide by 400 feet long and the other was 120 feet wide by 540 feet long. From 1999 through 2001, two-thirds of the 120 by 540-foot cut was sluiced. Minimal sluicing was done on the 120 by 540-foot cut in 2002 due to wet weather conditions. They plan to finish this cut in the 2003 mining season. The Cuevas also stripped another cut downstream which was 120 feet wide by 420 feet long. They also plan to start sluicing this cut in 2003.

WATER SUPPLY AND TREATMENT Water for this operation has been obtained using an in-stream reservoir in Gold Run Creek. Process water has been recycled when possible to do so. The total settling area used was 150 feet by 300 feet.

GOLD Gold recovered from this property is 840 to 870 fine. It is mostly round, smooth and chunky with some flat, angular and rough pieces and some wire gold. Twenty percent is +10 mesh, 70% was -10 to +60 and 10% was -60. Some 1/4 ounce and smaller quartz-rich nuggets were obtained.

COMMENTS Much of the 1999 mining season was spent on the construction and modification of the new sluice plant. The operators have noted old mining shafts during the stripping process. They also encountered old bones at the mud/gravel contact in some areas of the site.

DOMINION AND ARKANSAS CREEKS 115O/10G

A-1 Cats	63°44'N 138°31'W
Water Licence: PM97-047	2002
Dominion-Sulphur Placer Area	**Site no. 86**

OPERATION/LOCATION A-1 Cats commenced operations in 2002 at this site formerly mined by Miles and Vicki Johnson. The site is located on the west central portion of the Dominion Creek valley bottom at a location 1500 feet downstream from its confluence with Arkansas Creek where the valley width averages 2400 feet. There were six miners and four camp personnel working one 12-hour shift per day at this site.

EQUIPMENT/FUNCTION A Caterpillar D11N bulldozer equipped with a 54 cubic yard push capacity U-blade and a single-shank ripper was used to strip overburden. A Caterpillar D9H bulldozer equipped with a U-blade and a ripper was used for coarse tailings removal, road construction and maintenance, pay gravel stockpiling, and also assisted in the removal of overburden. Pay gravels were loaded into two Caterpillar 30013 rock trucks by a Caterpillar 235C excavator and a second 235C excavator was used to load the wash plant. A third 30013 rock truck was available onsite as a standby unit. Both excavators were utilized during the later stages of stripping to construct pre-ripped perimeter and cross drainage ditches to enhance pay gravel thaw. A Caterpillar LPG D6H bulldozer equipped with a winch and a straight blade was used for grooming purposes over soft ground conditions during ongoing reclamation of disturbed areas. A Caterpillar 966C wheeled loader was used on-site for a variety of work.

WASH PLANT Pay gravel were loaded into a 15 cubic yard hopper feeder consisting of a variable speed belt measuring 3½ feet wide by 16 feet long. A second conveyor belt, measuring 4 feet by 50 feet, elevated the material to a 5-foot by 16-foot Clemro horizontal double screen wash deck. A rock kicker was utilized on this conveyor to discard boulders exceeding 12 inches in diameter. The upper deck screened the material to 1½-inch minus and the lower deck screened to ⅜-inch minus, using standard steel mesh. A side-mounted bottom-slotted boil box distributed the screened slurry into a primary sluice run. The primary sluice was made up of two 4-foot wide by 10-foot long boxes containing one-inch angle iron riffles and sloped at 2 inches per foot. The second run consisted of four 20-foot by 4-foot oscillating (160 RPM) sluices containing expanded metal and sloped at 1½ inches per foot. A 3-foot by 40-foot conveyor was used to stack coarse tailings and fine tailings self-dispersed into an old mine cut. All sluice runs were lined with heavy traffic Nomad carpet. Gold was separated from the concentrate with the use of a long tom and a 4½-foot by 9-foot Wilfrey table. The 3000 igpm of water necessary to process the 200 loose yards per hour of pay gravel that went through the plant was provided using a 10 by 8-inch Berkley pump powered by a 250 horsepower Isuzu engine.

GROUND DESCRIPTION The stratigraphic section in the mine cut consisted of a massive black mud layer ranging from 8 to 18 feet thick. The mud was underlain by a package of reddish-brown silt, sand and gravel ranging from 7 to 17 feet thick. Bedrock averaged 25 feet deep and was generally flat with occasional pockets 2 feet deep. Bedrock was made up of a dark gray coloured micaceous, garnet-rich schist and occasional greenish grey in colour in areas proximal to quartz stockwork outcrops. The sluice section consisted of 4½ feet of the lowermost reddish-brown cobble-boulder gravels lying on bedrock and 1½ feet of bedrock. The waste section consisting of frozen black mud and upper silt, sand and gravel was longitudinally and cross-ripped and ramped out of the mine cut with a D11N bulldozer.

MINING CUTS One cut, 320 yards wide by 125 yards long, was mined in 2002. A total of 300,000 cubic yards of overburden were removed to reach the 92,000 loose cubic yards of pay gravels which were sluiced.

WATER SUPPLY AND TREATMENT Water was obtained from an existing reservoir in an old mine cut with a surface area of 40,000 square yards. The operation recycled 100% of the process water.

GOLD The gold was very flat, smooth and dull. It had a fineness of 830. Most of the gold was fine-grained with 46% -30 mesh, 49% +30 to -20 mesh, 3% +20 to -10 mesh, and 2% +10 mesh.

COMMENTS On September 14, the operation started water stripping cuts for next season. Material removed from the first cut had an area of 28,500 square yards and the second had an area of 12,000 square yards.

DOMINION CREEK 115O/10, 115 O/15

Miles and Vicki Johnson	63°45'N 138°31'W
Water Licence: PM96-061	1998, 2000
Dominion-Sulphur Placer Area	**Site no. 87**

OPERATION/LOCATION Maverick Gold Mines Inc. continued to mine this site located on Dominion Creek at its confluence with Arkansas Creek. This area of the Dominion Creek valley is approximately 1200 feet wide and flat. A crew of five miners and two camp personnel worked 10 hours per day at the site.

Miles and Vicki Johnson's plant processing material on Dominion Creek near Arkansas Creek in 1998.

EQUIPMENT/FUNCTION The equipment used to mine this site was a Caterpillar D9L bulldozer, a Caterpillar 980 loader, a Komatsu PC400 excavator and two 25-ton Moxy trucks.

WASH PLANT The wash plant consisted of a 6 by 16-foot screen deck which fed to four 4 by 20-foot oscillating trays. The 3000 igpm of water needed to process 80 to 120 loose yards of pay per hour was supplied by a 12 by 14-inch pump, powered by a 6-71 General Motors engine.

GROUND DESCRIPTION This ground was approximately 28 feet deep to bedrock. It consisted of 6 to 15 feet of black muck over 10 to 15 feet of sand and Dominion gravel on top of 3 to 5 feet of mixed White Channel and Dominion gravel. The sluice section was 2 to 4 feet of gravel and 2 to 4 feet of bedrock.

MINING CUTS Five cuts of varying sizes were mined in 1999.

WATER SUPPLY AND TREATMENT Water was acquired from Dominion Creek with a two pond, out-of-stream re-circulation settling system used to recycle approximately 70% of the water.

GOLD The gold had a purity of 830 to 850 fine. It was described as flat and fine-grained. Final cleanup of concentrates was accomplished using tables.

COMMENTS The majority of the work required to decommission this site was accomplished at the end of the 1999 mining season. The remainder of the work was completed in 2000.

KENTUCKY CREEK • 115O/15A, 115 O/16

Peter Bodin	63°46'N 138°31'W
Water Licence: PM99-071	2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 88**

OPERATION/LOCATION Peter Bodin is in the early stages of operation at this site. Kentucky Creek is a left limit tributary of Dominion Creek. Mr. Bodin's operation has been working an area upstream of the Dominion Creek road. Ground preparation has been progressing each year. Mr. Bodin worked the site alone, putting in one eight-hour shift per day. Mr. Bodin has not yet begun to sluice at this location.

EQUIPMENT/FUNCTION Two Caterpillar bulldozers, models D8H and D6, as well as a Caterpillar model 977H front-end loader were used to mine the site.

WASH PLANT The wash plant which Mr. Bodin plans to use is a 36-inch drum trommel which is fed by a conveyor belt fed by a dump box. Water will be supplied using a 4-inch Monarch pump powered by a Dietz engine. Mr. Bodin anticipates using 1400 igpm to wash 25 cubic yards per hour.

GROUND DESCRIPTION Drilling of the site has indicated 19 to 24 feet of frozen black muck over gravel. The muck overlays approximately 3 feet of gravels. All of the gravel section will be sluiced.

MINING CUTS One cut 110 feet by 86 feet has been stripped to allow thaw.

WATER SUPPLY AND TREATMENT Process water will be obtained from Kentucky Creek. The settling system will be two out-of-stream ponds each 50 feet by 50 feet.

Peter Bodin's camp on the right limit of Kentucky Creek in 2000. Initial stripping can be seen across the valley from the camp.

GOLD Gold is expected to have a fineness of 820 based on gold found in the surrounding area.

DOMINION CREEK 115O/15A

Jim Conklin	63°47'N 138°35'W
Water Licence: PM99-045	1998, 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 89**

OPERATION/LOCATION This small operation located on Dominion Creek upstream from its confluence with Hunter and Leana creeks occupied two miners each year except for 2000 when there was one miner and 2002 when there were three. In 1998 and 1999, the working shift was 12 hours. This dropped to 10 hours per day for 2000 and 2001. The shift increased to 12 hours per day again in 2002.

EQUIPMENT/FUNCTION Mr. Conklin used a Fiat Allis model HD-31 bulldozer with a U-blade and ripper and a Michigan model 175-B loader with a 6-yard bucket to mine the property. In 2001, a Kawasaki model 95ZIII loader was also used. In 2002, a model 350H Bucyrus Erie backhoe was added.

WASH PLANT The processing plant used at this site consisted of a 4-foot by 8-foot ¾-inch screen deck feeding two 4-foot by 8-foot sluice runs. The sluice runs were fitted with expanded metal and carpet. The operation processed 60 loose yards per hour in 1998 and 1999, 80 in 2000 and 100 in 2001. In 1998 and 1999, process water was supplied at a rate of 1200 igpm by a 6-inch Jaeger pump powered by a Ford diesel engine. In 2000, Mr. Conklin used 800 igpm of water. The pump was powered by a 4-cylinder engine. In 2001, water consumption increased to 900 igpm using the same pump and engine as in 2000.

Jim Conklin's processing plant on the right limit of Dominion Creek upstream from Hunter Creek.

GROUND DESCRIPTION During the 1998 mining season, Mr. Conklin re-processed two tailings piles from previous operations at the site. In 1999, this operation worked to a total depth of 12 to 15 feet. The sluice section was 4 to 6 feet of muck and gravel and 2 feet of bedrock. In 2000, 10 feet of overburden and 2 feet of waste gravels were removed to reach the 5 feet of pay gravels and 3 feet of bedrock which were processed. In 2001, the operation removed 17 feet of silt and sand and 2 feet of waste gravel to reach the 5 feet of pay gravel and 5 feet of bedrock which were processed. In 2002, the total depth of the ground was 24 feet. Fourteen feet of overburden were removed to reach the 10 feet of pay which were sluiced. The sluice section included from 3 to 6 feet of bedrock. Some of the material processed in 2002 was tailings.

MINING CUTS In 1998, two tailings piles were mined. From 1999 to 2000, one cut was mined each season. In 1999, the cut was 550 feet long by 150 feet wide. In 2000, the cut was 80 feet wide by 200 feet long. In 2001, the cut was 125 feet wide by 250 feet long. In 2002, in addition to the 8000 yards of tailings which were sluiced, two cuts were made in virgin ground. The two new cuts were 150 feet by 100 feet and 125 feet by 200 feet in area.

WATER SUPPLY AND TREATMENT This operation utilized a total re-circulation system for water acquisition and treatment. No visible discharge was noted from the site. Mined-out cuts were used for settling as well and were also backfilled with overburden from subsequent cuts.

GOLD In 1998, 1999 and 2002, the gold obtained had a reported fineness of 820 and consisted of fine-grained, angular particles. The size was from 10 to 60 mesh. In 2000 and 2001, the reported fineness was 825 with the material recovered continuing to be fine-grained and mostly minus 60 mesh.

COMMENTS Mr. Conklin used a long tom or wheels to clean up his concentrate. Some areas of the site have gradually been tidied up from previous operations.

DOMINION/NEVADA CREEKS 115O/15

Art Sailer	63°48'N 138°38'W
Water Licence: PM98-040	1998, 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 90**

OPERATION/LOCATION Arthur Sailer was licenced to mine on three properties on Dominion Creek each year. In 1998 and 1999, his crew was made up of six miners and two camp workers. In 2000 and 2001, there were two fewer miners.

On average two miners worked at each site with movement of employees between the sites as required. The regular shift was 10 hours per day. The property mined under this licence is a left limit bench of Dominion Creek. The approximate valley width in this area is 1500 feet.

EQUIPMENT/FUNCTION Equipment used by Mr. Sailer to mine the properties was four Caterpillar bulldozers, three Caterpillar front-end loaders, two Caterpillar excavators. Three of the bulldozers, models D9G, D9H, D8-14A, were equipped with U-blades and rippers. The other bulldozer, model D8-14A, was equipped with an S-blade and a winch. The loaders were model 980B with 5 cubic yard buckets. The Caterpillar excavators were models 225 and EL300. In 1997, a model 235 Caterpillar excavator was added. An additional Caterpillar excavator, model 235, was used in 2000 and 2001. Generally a bulldozer, a loader and an excavator were used at this site, however, equipment was moved as required between the sites.

WASH PLANT The wash plant used on the Dominion Creek and Nevada Creek site was a 5-foot by 14-foot screen plant with a 10-foot by 10-foot sluice run with expanded metal and Nomad carpet and an 8-foot by 4-foot run with 1¼ angle iron riffles. This plant processed approximately 100 to 150 loose yards per hour.

In 2001 and 2002, all sluiced material was processed using an ELRUSS 5 by 14-foot double deck screening plant. Pumps used for the Dominion Creek/Champion Pup and the Dominion/Nevada creek sites were a 12 by 14-inch Byron Jackson and a 10 by 12-inch Dayton Dowd, each powered by D13000 Caterpillar engine.

GROUND DESCRIPTION The miners encountered deposits having a total depth varying from 30 to 50 feet. Of the total depth, 10 to 40 feet was reported to be muck and 5 to 15 feet was gravel. From 6 to 12 feet of the gravel and up to 5 feet of the bedrock were sluiced. Gravel sizes and bedrock types were varied.

MINING CUTS In 1998, four cuts with an approximate size of 85,000 cubic yards were sluiced. In 1999, six cuts of 120,000 cubic yards were sluiced. In 2000, four cuts of 6800 cubic yards were sluiced. In 2001, three cuts of 55,000 cubic yards were sluiced. In 2002, the total cubic yardage moved, in four cuts, was 245,124.

WATER SUPPLY AND TREATMENT Out-of-stream water acquisition and settling ponds were used at this site.

Processing pay at Art Sailer's operation on Dominion Creek in 1998.

GOLD Gold recovered from this site was fine, flat and flaky with some spongy and quartzy nuggets. There was 1% +10 mesh, 50% -10 mesh to +60 mesh and 49% -60 mesh.

DOMINION CREEK/CHAMPION PUP 115O/15

Art Sailer	63°49'N 138°41'W
Water Licence: PM98-041	1998, 2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 91**

OPERATION/LOCATION Arthur Sailer was licenced to mine on three properties on Dominion Creek each year. Mr. Sailer did not mine under this licence in 1999 in order to concentrate his efforts on the ground covered by licence PM98-040. His crew consisted of six miners and two camp workers. On average, two miners worked at each site with movement of employees between the sites as required. The regular shift was 10 hours per day. The property mined under this licence is creek and left limit bench ground of Dominion Creek. The valley width in this area is approximately 1500 feet.

EQUIPMENT/FUNCTION Equipment used by Mr. Sailer to mine the two properties was four Caterpillar bulldozers, three Caterpillar front-end loaders, and two Caterpillar excavators. Three of the bulldozers, models D9G, D9H, D8-14A, were equipped with U-blades and rippers. The other bulldozer, model D8-14A, was equipped with an S-blade and a winch. The loaders were model 980B with 5 cubic yard buckets. The Caterpillar excavators were models 225 and EL300. After 1999, a model 235 Caterpillar excavator was added. Generally two bulldozers, a loader and an excavator were used at this site, however, equipment was moved as required between the sites.

WASH PLANT The wash plant used on the Dominion Creek and Champion Pup site was a 10-foot by 20-foot Derocker. This plant processed approximately 100 loose yards per hour. In 1998, a 5-foot by 20-foot trommel with a 4-foot by 18-foot sluice run equipped with expanded metal and angle iron and water riffles was also used on this site. In 2001 and 2002, all sluiced material was processed using an ELRUSS 5 by 14-foot double deck screening plant. Pumps used for the Dominion Creek/Champion Pup and the Dominion/Nevada creek sites were a 12 by 14-inch Byron Jackson and a 10 by 12-inch Dayton Dowd, each powered by a D13000 Caterpillar engine.

GROUND DESCRIPTION The miners encountered from 10 to 40 feet of muck over 5 to 15 feet of gravel. Of this, from 6 to 12 feet of the gravel and up to 5 feet of the bedrock were sluiced.

MINING CUTS In 1998, two cuts, with a total volume of approximately 33,000 cubic yards, were mined. In 2000, three cuts totalling approximately 35,000 cubic yards were mined. In 2001, the three cuts mined had a total volume of approximately 47,000 cubic yards. In 2002, two cuts were mined with a total cubic yardage moved of approximately 45,000.

WATER SUPPLY AND TREATMENT Small in-stream reservoirs were used at this site. Settling was accomplished in out-of-stream ponds.

GOLD Gold recovered from this site was fine, flat and flaky with some spongy and quartz-rich nuggets. There was a slightly higher portion of coarser gold than found at the Dominion/Nevada creek sites.

DOMINION CREEK 115O/15

Favron Enterprises Ltd.	63°50'N 138°45'W
Water Licence: PM97-059	1998, 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 92**

OPERATION/LOCATION The Favrons continued to mine at this property located approximately 25 miles from the Indian River. In 1998, the mine employed seven miners and three camp employees, working one 11-hour shift per day. In 1999, there were five miners. In 2000, there were six miners. In 2001, there were two miners working at the site and no camp workers. In 2002, four miners sluiced at this property.

EQUIPMENT/FUNCTION Two bulldozers were used to rip and strip ground from 1998 to 2000. One was a D9L Caterpillar and the other an FD50 Fiat Allis. In 2001, an 8220 Terex bulldozer with a straight blade was used to move and push dirt to a monitor which was used for hydraulic stripping. The pump used for hydraulic stripping was a 12 by 10-inch Binham, with power supplied by a 6-71 Detroit Diesel engine. A mud pump was used to transfer effluent from the hydraulic stripping to a previously mined cut for settling. In 2002, the Caterpillar D9L bulldozer was used to remove overburden to expose pay on the right limit side of the cut. Two 350H Bucyrus Erie hydraulic excavators equipped with 2½ yard buckets were used to dig drains and clean bedrock in 1998. From 1999 to 2002, only one of the excavators was used at this site. Two TS24B and 2 TS18 Terex scrapers were used to haul overburden and pay dirt in 1998 and 1999. Only the TS24B scrapers used in 2000 to haul pay dirt. No scrapers were used in 2001 but all four were used to haul and stockpile pay for four days in 2002. One of the TS-18s remained at the site to finish mining the cut. In 1998 and 1999, two bulldozers, one an 82-30B and the other an 82-40 Terex, were used to push up to the wash plant. In 2000, two 82-30B Terex bulldozers with U-blades were used to push off overburden. In 2002, one 8240 Terex bulldozer was used to feed the wash plant.

WASH PLANT A variable speed 42-inch by 21-foot belt feeder fed to a 42-inch by 60-foot elevation conveyor. The conveyor fed to a 5-foot by 10-foot double screen deck with 1½-inch and ¾-inch screens. The plus ¾-inch material travelled out a 36-inch by 35-foot radial stacking conveyor. The minus ¾-inch material flowed down two 12-inch hoses to two 9-foot by 12-foot slick plates which channelled material into six 36-inch by 16-foot runs equipped with expanded metal with Nomad matting for 16 feet and an additional section 2-foot by 4-foot 1-inch, equipped with 1-inch riffles over Nomad matting. The expanded metal sections were set at a slope of 1½ inches to the foot. The riffle-equipped sections were set at a slope of 2 inches to the foot. There were three of the runs on each side of the plant. Water was supplied to the plant using a Peerless 10 by 12-inch pump powered by a 671 General Motors engine. In 2000, the pump was powered by a 4-71 Detroit Diesel engine. The plant used 2500 igpm to process 150 loose yards per hour. Concentrates were cleaned using a long tom and a 48-inch reverse spiral wheel.

GROUND DESCRIPTION The stratigraphic section encountered was 25 feet of frozen muck with ice seams over 10 feet of gravel. The sluice section was 5 feet of the gravel and 1 foot of bedrock. In 1999, the stratigraphic section was 30 feet of frozen black muck with ice seams over 10 feet of grey silt on 10 feet of gravel located 10 feet below the watercourse. The bedrock was sloped and wavy. The sluice section was 6 feet of the gravel and from 1 to 3 feet of bedrock. The cut mined in 2000 had up to 40 feet of frozen black muck over 5 feet of gravel with a grain size ranging from sand to coarse gravels. The sluice section was 4 feet of gravel and 1 foot of bedrock. In 2001, hydraulic stripping methods were used to remove 10 feet of thawed black muck and silt from a heavily hand-mined area.

MINING CUTS Three cuts were mined in 1998. They were 450 feet by 210 feet, 2100 feet by 122 feet and 600 feet by 150 feet, for a total of 332,984 cubic yards moved. Three cuts were mined in 1999. They were 500 feet by 200 feet, 1100 feet by 150 feet and 1000 feet by 150 feet, with a total cubic yardage of 1,090,900. One cut was mined in 2000. It was 1400 feet by 150 feet for a total of 233,000 cubic yards. In 2001, one cut was prepared for sluicing in 2002. The cut was 950 feet by 200 feet. A total of 70,370 cubic yards were removed from the cut in 2001 and 49,259 cubic yards were sluiced from the cut in 2002.

WATER SUPPLY AND TREATMENT Water was obtained and treated using an in-stream system which was part of a second channel down Dominion Creek. When water was not in use it flowed down a channel away from the acquisition/settling system. The operation recycled approximately 50% of process water. The pond size in 1998 was 150 feet by 200 feet. In 1999, the pond was 1000 feet by 150 feet.

GOLD The gold recovered was bright in fine, flat pieces with some quartz present. The purity was 820 fine.

COMMENTS Old workings were encountered during mining. Work has started on preparing the site for decommissioning over the next few years.

CARIBOU CREEK 115O/15

Jim Stuart and Roger Stuart	63°50'N 138°49'W
Water Licence: PM98-049	1998, 1999, 2000, 2001, 2002
Dominion-Sulphur Placer Area	**Site no. 93**

OPERATION/LOCATION Jim Stuart and his son Roger continued to mine this property. Caribou Creek is a right limit tributary of Dominion Creek near its headwaters. The Caribou Creek valley is fairly narrow and has relatively low flows during much of the mining season.

EQUIPMENT/FUNCTION Two Caterpillar bulldozers, models D9G and D8H, a 966 Caterpillar loader and a 125B Case excavator were used to mine the property.

WASH PLANT A 54-inch diameter trommel was used to process pay. The trommel had a total length of 28 feet with 6 feet of that a section of screen. The trommel screened material to 1 inch. It had two sluice runs, each of which were 5 feet wide by 8 feet long. The sluice runs were equipped with New Zealand-style water riffles for the first 4 feet on each side and then expanded metal over Nomad matting for the rest. Process water was supplied using a 6 by 8-inch Monarch pump powered by a 671 General Motors engine. The plant used 1200 to 1500 igpm to process 80 to 100 loose yards per hour. A single cell jig was used for cleanups.

GROUND DESCRIPTION This operation typically encountered 15 feet of black muck over 4 to 6 feet of gravel. The sluice section was all of the gravel and up to 2 feet of bedrock. In 2002, the cut on Dominion Creek had an average depth of 15 to 18 feet. The muck layer was mixed and not all black muck as was encountered on Caribou Creek. The gravel averaged 4 to 5 feet deep. The sluice section on the Dominion cut was the gravel layer only.

MINING CUTS Generally a couple of cuts were mined per year along Caribou Creek. In 2002, one of the cuts was on the left limit of Dominion Creek.

WATER SUPPLY AND TREATMENT Process water was obtained from Caribou Creek. Settling was accomplished in small in-stream ponds with final settling in a large pond on the right limit of the Dominion Creek valley at the mouth of Caribou Creek. The large pond was in-stream during the mining season with flows routed around the pond at the end of each season. In 2002, process water for the cut on the left limit of Dominion Creek, across from the mouth of Caribou

Creek, was obtained from a large beaver pond at the mouth of Caribou Creek and settling was accomplished in a pond set up below the cut.

GOLD The purity of gold from this creek is typically from 816 to 840 fine.

DOMINION CREEK 115O/15E

Art Sailer	63°51'N 138°48'W
Water Licence: PM98–049	2002
Dominion-Sulphur Placer Area	**Site no. 94**

OPERATION/LOCATION Arthur Sailer was licenced to mine on three properties on Dominion Creek each year. On average, two miners worked at each site with movement of employees between the sites as required. The regular shift was 10 hours per day. The property mined under this licence is on the left limit of Dominion Creek, upstream from its confluence with Caribou Creek. The activity was covered by a water use licence held by Jim Stuart. The approximate valley width in this area is 500 feet.

EQUIPMENT/FUNCTION Mr. Sailer utilizes the following equipment as needed at each of his mine sites: four Caterpillar bulldozers, three Caterpillar front-end loaders and four Caterpillar excavators. Three of the bulldozers, models D9G, D9H, D8-14A, were equipped with U-blades and rippers. The other bulldozer, model D8-14A, was equipped with an S-blade and a winch. The loaders were model 980B with 5 cubic yard buckets. The Caterpillar excavators were two model 235, and one each of models 225 and EL300. Generally a bulldozer, a loader and an excavator were used at a given site, however, equipment was moved as required between the sites.

WASH PLANT The plant used to process material was an ELRUSS 5 by 14-foot double deck screening plant. Pumps used were a 12 by 14-inch Byron Jackson or a 10 by 12-inch Dayton Dowd each powered by a D13000 Caterpillar engine.

GROUND DESCRIPTION The ground mined in this area was approximately 15 feet deep.

MINING CUTS The cut mined was 166 yards by 50 yards in area, with a total of 41,500 cubic yards processed.

WATER SUPPLY AND TREATMENT Out-of-stream water acquisition and settling ponds were used at this site.

GOLD The purity of gold recovered from the middle to upper reaches of Dominion Creek historically ranges from 805 to 849 fine.

COMMENTS Much of the site was recontoured on completion of processing the cut and all equipment was removed to the main camp downstream on Dominion Creek.

UPPER DOMINION CREEK 115O/15D

Tim Coles	63°52'N 138°55'W
Water Licence: PM97-054	2002
Dominion-Sulphur Placer Area	**Site no. 95**

OPERATION/LOCATION Tim Coles started mining this property at the headwaters of Dominion Creek in June of 2002. The site has been mined previously. The site was mined by two to three miners working an average of 12 hours per day. Mr. Coles was able to sluice from August 15 to October 7 in the 2002 mining season.

EQUIPMENT/FUNCTION The site was mined using a model 890 John Deere excavator and a model D6 Caterpillar bulldozer. In September, a model EL300 Caterpillar excavator was added. The D6 was used for road maintenance and reclamation work. The excavators were used for all other mining-related works.

WASH PLANT The wash plant consisted of a 4-foot by 22-foot trommel which screened material to ⅝ of an inch. Recovery was via two 4-foot wide by 8-foot long sluice tables which were stacked one above the other. The sluice tables were equipped with 4 feet of expanded metal and 4 feet of 1¼-inch riffles on matting. The process rate for the plant was 60 to 70 loose yards per hour. Water was supplied using an 8-inch by 10-inch Paco pump powered by a Cummins engine. The pump rate was 1200 to 1500 igpm. A long tom was used for final cleaning of concentrates.

GROUND DESCRIPTION The miners encountered an average of 20 feet of muck. Beneath the muck was a 5 to 8-foot gravel layer.

MINING CUTS The total area mined at this site in the 2002 mining season was 22,500 square feet.

WATER SUPPLY AND TREATMENT Process water was obtained from an in-stream recycle pond. The operator found it necessary to utilize 100% re-circulation of process water in order to ensure an adequate water supply. The recycle pond was approximately 50 feet wide by 120 feet long. The operator also found it necessary to have a pre-settling pond at the end of the trommel in order to meet the effluent standard. Approximately 50% of the John Deere excavator's hours were spent removing tailings from the pre-settling pond.

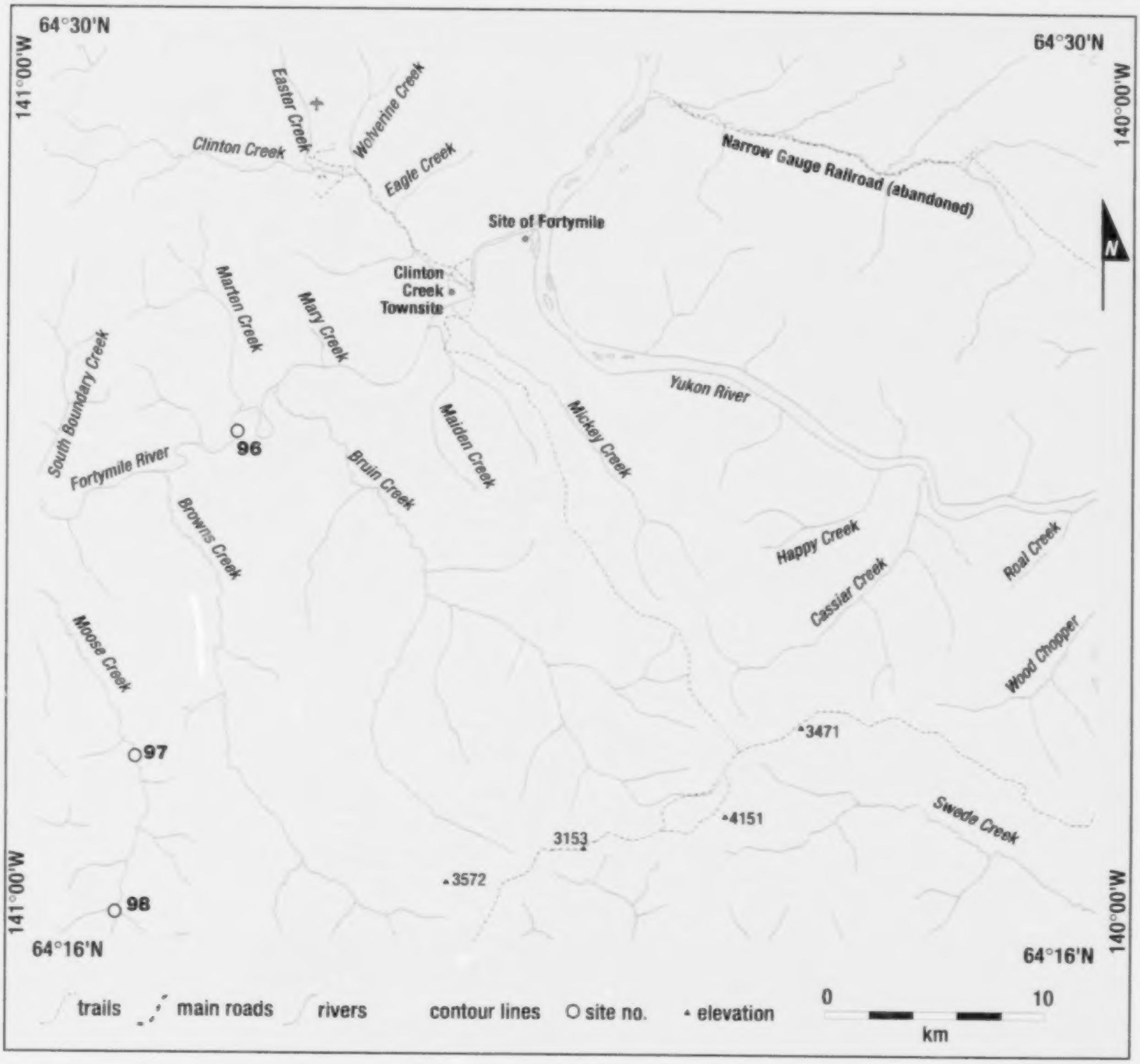
GOLD Gold recovered from this property was reported to be coarse and rounded. Nuggets up to half an ounce were recovered. The purity was reported as 790 fine.

COMMENTS The operation is working to address site reclamation on an ongoing basis.

FORTYMILE

PLACER AREA

SITES 96-98


64°30'N
141°00'W
64°30'N
140°00'W
Easter Creek
Wolverine Creek
Clinton Creek
Eagle Creek
Narrow Gauge Railroad (abandoned)
Site of Fortymile
N
Clinton Creek Townsite
Marten Creek
Mary Creek
South Boundary Creek
Yukon River
Maiden Creek
Mickey Creek
96
Fortymile River
Bruin Creek
Browns Creek
Happy Creek
Cassiar Creek
Roal Creek
Moose Creek
Wood Chopper
3471
97
4151
Swede Creek
3153
3572
98
141°00'W
64°16'N
64°16'N
140°00'W
trails
main roads
rivers
contour lines
site no.
elevation
0
10
km

LEGEND

96...... Fortymile Placers, Fortymile River
97...... Robert Young, Moose Creek
98...... Daniel Jones, Moose Creek

FORTYMILE RIVER 116C/2

Fortymile Placers	64°21'N 140°49'W
Water Licence: PM97-072	1998, 1999, 2000, 2001, 2002
Fortymile Placer Area	**Site no. 96**

OPERATION/LOCATION Leslie Chapman and Bill Claxton ran a family mining operation at several locations along the Fortymile River River, upstream from Marten Creek. Two bench deposits and one gravel bar were mined on the left limit of the river, about 10 miles upstream from its confluence with the Yukon River.

EQUIPMENT/FUNCTION A Caterpillar D6C bulldozer was used for ground preparation and for levelling tailing piles. An Hitachi UH10 excavator was used to excavate gravel and to feed the wash plant. A Caterpillar 920 loader was used as backup and to feed the wash plant.

WASH PLANT A 4-foot diameter trommel, 12-foot long, with 5/16-inch punch plate screen deck and two, 4 by 6-foot sluice runs with hydraulic riffles and a 30-foot long tailings stacker conveyor belt were mounted on a barge, 15 feet wide by 28 feet long, and floated within the mining cut. A 4-inch submersible electric pump recycled about 700 igpm from within the mining cut, which were used to sluice 90 cubic yards per hour. A 3-inch submersible electric pump provided about 300 igpm make up water when required.

GROUND DESCRIPTION The farthest upstream bench mining cut had less than 3 feet of overburden on top of 18 to 21 feet of gravel. The downstream bench mining cut had 3 feet of overburden on top of 15 feet of gravel. Up to 3 feet of bedrock were also ripped and sluiced from bench cuts. The gravel bar mining cut was about 15 feet deep. All gravel, plus 2 to 3 feet of bedrock, were sluiced.

MINING CUTS The farthest upstream bench mining cut was about 450 feet long and was excavated in strips about 100 feet wide each season in 1998 and 1999. The downstream mining cut was about 200 feet long and was excavated about 120 feet wide each season in 2000 and 2001. In 1998, the gravel bar was mined about 120 feet wide by 400 feet long by 15 feet deep and in 1999 about 120 feet wide by 180 feet long by 15 feet deep.

WATER SUPPLY AND TREATMENT Make-up water for the bench operation was pumped from the Fortymile River using fish screen on the pump intake and processing water was recycled from within the mining cut using a submersible pump mounted on the floating barge with the wash plant. Discharge from the bench and gravel bar operations was by seepage only. In 2000, at the downstream bench operation, the effluent was treated in a series of three settling ponds and then discharged to the Fortymile River using a 4-inch syphon pipeline and diffuser mechanism to reduce the environmental impact.

GOLD Gold was mostly powder with about 5% coarse gold at plus 10 mesh, with a fineness of 840.

Fortymile Placers stripping on bench, 2001.

Leslie Chapman atop of Fortymile Placers' floating trommel while Bill Claxton feeds pay material.

COMMENTS Site specific operating conditions required gravel bar mining cuts to be separated from the river by protective berms. Mining was carried out during low-water periods only with no discharge of effluent other than by seepage. Restoration and stabilization of the gravel bar and bank was completed at the end of each season.

MOOSE CREEK 116C/2

Robert Young	64°08'N 140°55'W
Water Licence: PM97-067	1998, 1999, 2000
Fortymile Placer Area	**Site no. 97**

OPERATION/LOCATION Robert Young and Will Crayford ran a three-person operation in the valley bottom at the upstream end of Moose Creek about 3 miles east of the Alaska border. Robert Young started mining on Moose Creek in the fall of 1998; there was no mining activity at this site in 2001 or in 2002.

EQUIPMENT/FUNCTION One Caterpillar D9 bulldozer was used for stripping overburden and gravel. A Caterpillar 235 excavator was used to dig pay gravel and to feed the wash plant. A Caterpillar 988 loader was used to remove tailings

WASH PLANT A portable wash plant was mounted on large, rubber-tired wheels. An elevated 7 by 20-foot dump box fed into a single sluice run. The run was 3 feet wide by 18 feet long with 1½-inch punch plate over angle iron riffles. An 8 by 10-inch Cornell water pump, powered by a Detroit 871 diesel engine, supplied about 3000 igpm which was used to process about 200 cubic yards per hour.

GROUND DESCRIPTION Frozen overburden up to 12 feet deep was stripped from on top of gravel 8 to 10 feet deep. Gravel was frozen with layers separated by seams of sand and with large boulders up to 5 feet in diameter within the lower gravel layers. The bottom 5 feet of gravel, plus 3 feet of decomposed bedrock, were sluiced.

MINING CUTS Mining cuts extended from rim to rim across the valley bottom, from a minimum 50 feet wide up to about 100 feet wide, and averaging about half a mile in length each season in 1998, 1999 and 2000.

WATER SUPPLY AND TREATMENT The water supply pump was mounted on a truck, parked beside the creek, and the pump intake was suspended in the creek channel. There was a stream bypass channel on the right limit of the valley around the mining area. Process water was directed through three out-of-stream settling ponds.

GOLD The fineness of the gold was 840 plus and its composition was coarse with round flakes and some nuggets with quartz attached.

COMMENTS Much of the area had been previously cat mined, leaving little overburden in many places.

MOOSE CREEK 116C/2

Daniel Jones 64°08'N 140°55'W
Water Licence PM99-145 1998, 1999, 2000, 2001, 2002
Fortymile Placer Area **Site no. 98**

OPERATION/LOCATION Daniel Jones ran a two-person operation at the upper end of Moose Creek, a trans-boundary tributary to the Fortymile River, close to the Alaska border. In 2002, there was one camp person and two miners.

EQUIPMENT/FUNCTION One Case 1187B excavator with a 1-yard bucket was used to dig pay gravel, feed the wash plant, and remove tailings. A TD20 International bulldozer was employed in various functions including contouring tailings and reclamation work.

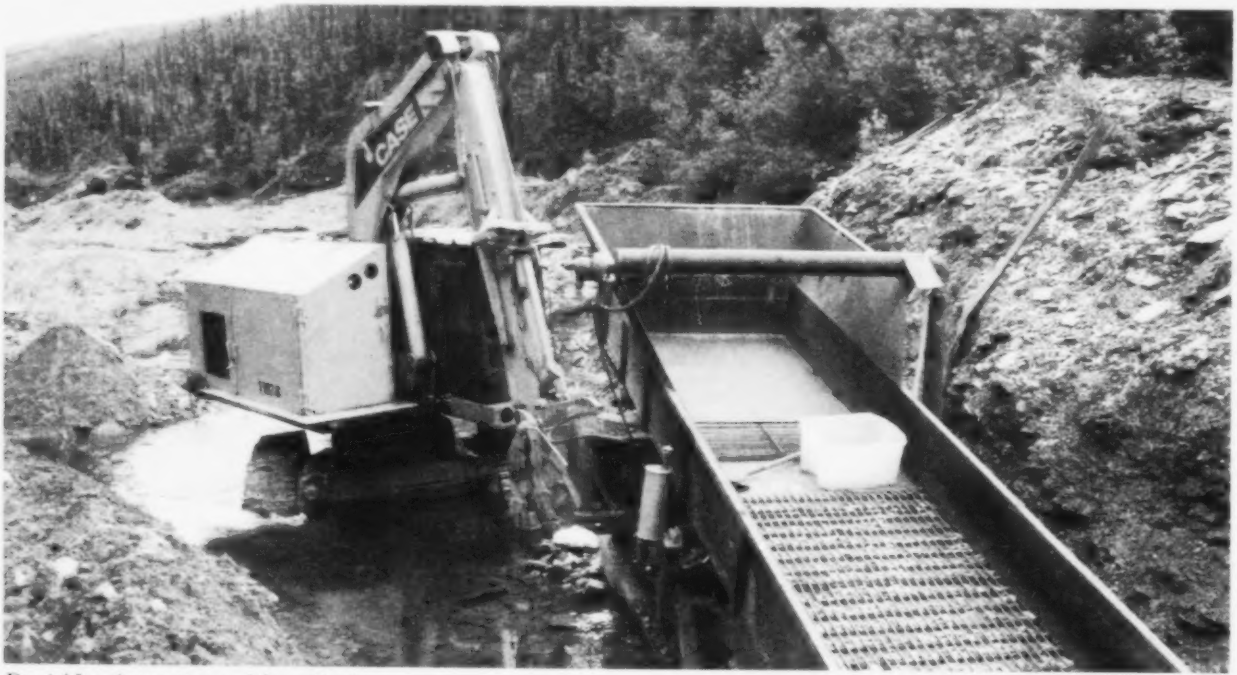
WASH PLANT An iron bar grizzly was mounted over a shaking sluice box, 20 feet long by 5 feet wide, with angle iron riffles on moss matting. A 4-inch water pump supplied about 500 igpm which was used to process up to 40 cubic yards per hour.

GROUND DESCRIPTION Organic overburden was less than 3 feet deep, and most gravels were thawed and varied in depth from 4 to 8 feet. There was a great deal of fine sand and small gravels mixed together. Bedrock was soft, blue green in colour and about 90% clay. The remaining 10% was fragmented schist. Once exposed, the bedrock was extremely sticky and difficult to work with.

MINING CUTS Mining cuts located in the centre of the narrow valley bottom were 25 to 30 feet wide and 200 to 300 feet long per season. In 1998, about 3000 cubic yards were excavated and in 1999 and 2000, about 4000 cubic yards were mined. There was no mining in 2001. In 2002, the area worked had approximately 4 feet of overburden and 4 feet of gravels. All of the gravels plus 1 to 2 feet of bedrock were sluiced.

WATER SUPPLY AND TREATMENT Water was 80% recycled and effluent settled in a series of 3 in-stream ponds, each about 100 feet by 300 feet long.

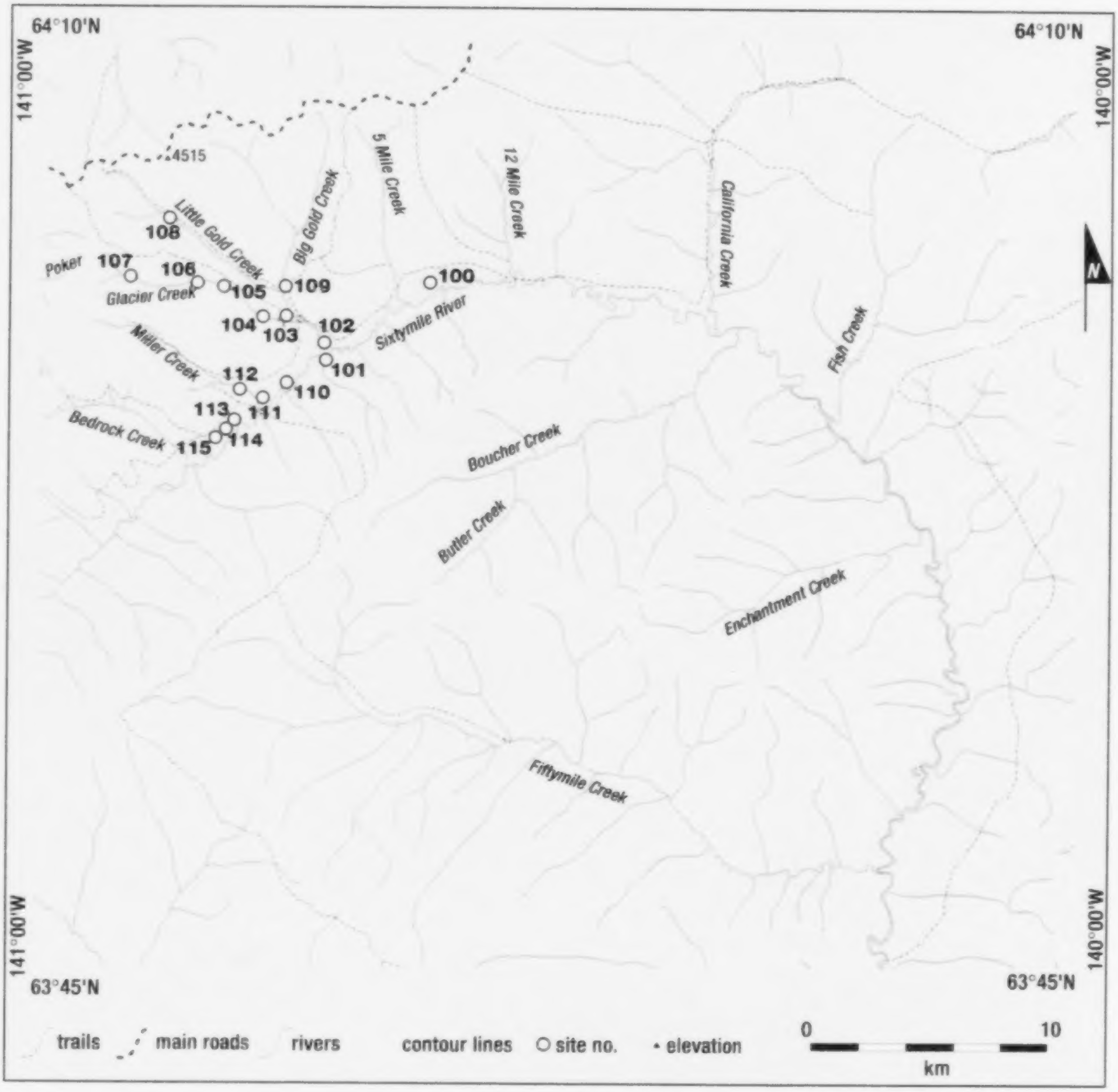
GOLD Coarse gold with 50% larger than 10 mesh and some nuggets up to a quarter ounce were found. The larger-sized gold was dull-coloured and covered with a blackish coating which the operator thought might be manganese. The smaller particles contained a lot of magnetite but were bright coloured. Purity at Moose Creek is about 855.



Daniel Jones' operation on Moose Creek.

SIXTYMILE PLACER AREA

SITES 100-115


64°10'N
64°10'N
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4515
5 Mile Creek
12 Mile Creek
California Creek
Big Gold Creek
Little Gold Creek
Poker
Glacier Creek
Miller Creek
Bedrock Creek
Sixtymile River
Fish Creek
Boucher Creek
Butler Creek
Enchantment Creek
Fiftymile Creek
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100
101
102
103
104
105
106
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108
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111
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115
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140°00'W
63°45'N
63°45'N
trails
main roads
rivers
contour lines
○ site no.
• elevation
0
10
km

LEGEND

100 ..... Eldorado Placers, Sixtymile River
101 ..... Jayce Murtagh (J.M. Mining), Big Gold Creek/Glacier Creek
102 ..... Steve Prohaszka, Big Gold Creek/Glacier Creek
103 ..... Tim Coles (Rauguth), Glacier Creek
104 ..... Stuart Schmidt (K-1), Glacier Creek
105 ..... K-1 Mining, Glacier Creek
106 ..... K-1 Mining, Glacier Creek
107 ..... Gordon Hagen, Glacier Creek
108 ..... Maurice Alexander (Stempien), Little Gold Creek
109 ..... Dredge Master, Hungry Gulch/ Big Gold Creek
110 ..... Frank and Karen Hawker (Tri-Kay), Sixtymile River
111 ..... Brisebois, Sixty Mile Bench Pits
112 ..... Jayce Murtagh (J.M. Mining), Miller Creek
113 ..... S. Schmidt, Sixtymile River
114 ..... Northway Mining, Sixtymile River
115 ..... Walter Yaremcio, Sixtymile River

SIXTYMILE RIVER 116C/02A

Eldorado Placer Ltd.	64°02'N 140°38'W
Water Licence: PM93-072	1998, 1999, 2000, 2001, 2002
Sixtymile Placer Area	**Site no. 100**

Operation/Location Greg Hakonson's operation mined property on the left limit of the Sixtymile River near 5 Mile Creek. Each year four miners worked one 12-hour shift per day except for 2001 when there were three miners.

Equipment/Function This operation used three Caterpillar D9L bulldozers and one Caterpillar 245 excavator to mine.

Wash Plant The wash plant used was a 5-foot by 18-foot double deck screen plant. The reported average process rate varied from year to year from 225 to 340 loose cubic yards per hour. Water was supplied at a rate of 5000 to 5500 igpm using a 10 by 12-inch Peerless pump powered by a 3206 Caterpillar engine. Jigs were used to clean concentrates which were removed from the wash plant every shift.

Ground Description In 1998 and 1999, the stratigraphic section for this property was reported as 3 yards of muck over 4 yards of gravel. The bottom 1 yard of gravel and 1 yard of bedrock were sluiced. In 2000, the operation processed an additional yard of the gravel. In 2001, the mud layer increased to 5 yards over the 4 yards of gravel. The sluice section was 1 yard each of gravel and bedrock. In 2002, the mud layer was 3 yards deep. The sluice section was the same as in 2001.

Mining Cuts Five cuts were mined in 1998 with a total volume of 137,490 cubic yards. In 1999, the total volume of the five cuts mined was 195,062 cubic yards. In 2000, four cuts were mined with a total volume of 72,000 cubic yards. In 2001, production was reduced to two cuts averaging approximately 17,000 cubic yards each. In 2002, the surface area of each of the four cuts mined was 120,000 square feet.

Water Supply and Treatment Water is obtained from out-of-stream ponds. Settling is also out-of-stream. The operation usually accomplished 100% re-circulation of process water. The pond size varies depending on the location on the property of the sluice setup. It can be as large as 2000 feet by 300 feet. Discharge from the site is generally drainage water although there have been discharges of overflow process water when working at the downstream end of the property.

Gold The fineness of the gold in 840. The gold is described as fine-grained.

Comments Reclamation is being addressed on an ongoing basis.

BIG GOLD & GLACIER CREEKS 116C/02B, C

Jayce Murtagh	64°01'N 140°43'W
Water Licence: PM99-113, PM97-026	2000
Sixtymile Placer Area	**Site no. 101**

Operation/Location In 2000, Jayce Murtagh sluiced test cuts at a number of locations on Glacier Creek under a water use licence held by K-1 Mining Services. In addition, he mined at the mouth of the Big Gold Creek valley under Water Use Licence PM99-113.

Equipment/Function A Caterpillar D9L bulldozer with single shank ripper was used to repair the road. A 980B Caterpillar loader and an Hitachi EX300LC excavator were used for stripping and sluicing. A Caterpillar D8 bulldozer owned by K-1 Mining Services Ltd. was also used as needed.

Eldorado Placer's sluice plant operating in the Sixtymile River area downstream from 5 Mile Creek in 2002.

WASH PLANT A 4-foot by 12-foot single deck screen with steel punch plate screened to ¾ inch. A hopper fed a 30-inch by 50-foot tailing stacker. Sluice runs are two 8-foot wide runs with hydraulic riffles. The pump was changed to an 8 by 10-inch Morris powered by a 3306 Caterpillar engine, with water use rate of 1800 igpm to wash 100 loose yards per hour. The clean-up system was changed to a two cell jig with a long tom.

GROUND DESCRIPTION The area mined on Glacier Creek had previously been stripped by K-1 Mining. Mr. Murtagh sluiced 3 feet of gravel and 3 feet of bedrock in this area. The total depth of the area worked at the mouth of Big Gold Creek is estimated to be 14 feet.

MINING CUTS The three cuts sluiced on Glacier Creek were each 50 feet by 100 feet in area. On Big Gold Creek an area 200 feet by 200 feet was stripped down by 8 feet. The site has not yet been sluiced.

WATER SUPPLY AND TREATMENT On Glacier Creek process water was recycled at a rate of approximately 50%, with settling occurring in a series of out-of-stream ponds that were mined-out cuts.

GOLD Gold from the area of Glacier Creek was stained brown and coarse. Purity of gold recovered from Glacier Creek typically ranges from 830 to 860 fine.

COMMENTS Reclamation was addressed as work was completed at each of the sites.

BIG GOLD AND GLACIER CREEKS 116C/02B

Steve Prohaszka	64°01'N 140°44'W
Water Licence: PM98-038	1998, 1999, 2000, 2001, 2002
Sixtymile Placer Area	**Site no. 102**

OPERATION/LOCATION This operation, located upstream from the confluence of Big Gold and Glacier creeks, near the Sixtymile River, was mined by Mr. Prohaszka and one employee. They usually worked one eight-hour shift per day. Mr. Prohaszka worked cuts both between the two creeks, and on the right limit of Glacier Creek.

EQUIPMENT/FUNCTION Mr. Prohaszka used two caterpillar bulldozers, models D9H and a D9L, both with U-blades and rippers, a Caterpillar 988 loader with a 6-yard bucket and a Drott 50 backhoe.

WASH PLANT Mr. Prohaszka sluiced using a 2-metre diameter trommel which he built on-site. The sluice runs were 24 feet by 8 feet with 2-inch riffles. The plant processed 180 loose cubic yards of material per hour. In 2002, a 3-foot by 6-foot shaker plant was used. It had 7-foot by 7-foot sluice runs equipped with New Zealand live riffles. This plant processed 80 loose yards per hour. Water was supplied to both plants using a 6-inch submersible pump to provide the 1600 imperial gallons per minute. Jigs are used to clean up concentrates from the wash plants.

GROUND DESCRIPTION In 1998 and 1999, Mr. Prohaszka had to strip 32 feet of frozen muck and 5 feet of waste gravel to get to the 4 feet of pay gravel and 6 feet of bedrock which he sluiced. In 2000, 2001 and 2002, the frozen muck layer increased to 40 feet and the pay gravel layer was 5 feet deep. In 2002, the waste gravel layer increased to 6 feet.

MINING CUTS In 1998 and 1999, one 200-foot by 300-foot cut was processed each year. The cut in 2000 was 300 feet by 400 feet. The cut in 2001 was 300 feet by 300 feet. In 2002, one cut 300 feet by 300 feet was mined on the right limit of Glacier Creek as well as a cut approximately 150 feet by 150 feet between the creeks.

WATER SUPPLY AND TREATMENT: In 1998 and 1999, the water came from Big Gold Creek. In 2000 and 2001, Glacier Creek was used.

GOLD Gold recovered had a purity of 840 fine.

GLACIER CREEK 116C/02B

Erich Rauguth	64°02'N 140°47'W
Water Licence: PM94-047	1998
Sixtymile Placer Area	**Site no. 103**

OPERATION/LOCATION Tim Coles finished up operations at this location early in the 1998 mining season. Some work was conducted under this water use licence on a left limit bench of Glacier Creek early in the year.

EQUIPMENT/FUNCTION Mr. Coles used a John Deere 890 excavator.

GROUND DESCRIPTION Work in 1998 was conducted on a left limit bench of Glacier Creek in an area which had been previously mined.

Sluicing on the left limit bench of Glacier Creek in 1998 under Erich Rauguth's water use licence.

Water Supply and Treatment Water was obtained using a small intake ditch from Glacier Creek. The water was pumped up onto the bench and then settled in an old working area. No discharge was noted from this location.

Gold Gold recovered from Glacier Creek has a purity from 830 to 860 fine.

GLACIER CREEK 116C/02

Schmidt Mining	64°02'N 140°48'W
Water Licence: PM97-026, PM99-094	2001, 2002
Sixtymile Placer Area	**Site no. 104**

Operation/Location Stuart Schmidt and his crew mined on Glacier Creek under water use licences held by K-1 Mining Services Ltd. The crew was four miners and one camp employee. They worked two 12-hour shifts per day. Schmidt Mining worked part of the season each year at this location.

Equipment/Function One Caterpillar D10N bulldozer was used to mine at this site.

Wash Plant The wash plant was a four-run sluice box with passive screening. It had a manually controlled feed with a monitor. The plant processed 150 loose yards per hour with water supplied by a 10 by 12-inch Morris pump, powered by a Caterpillar engine.

Ground Description In 2001, the operation did not sluice. An area was stripped on a left limit bench at the upstream end of the claim block. In 2002, the operation worked in an area of previously mined ground near the mouth of Owl Gulch. The previous mining took place in the 1940s and 1950s. In 2002, they sluiced a total area of 70,000 square feet.

Mining Cuts Two cuts were sluiced in 2002. The first was 40,000 square feet and the second was 30,000 square feet.

Water Supply and Treatment Process water was partially recycled in out-of-stream ponds on the right limit of Glacier Creek. The recycle rate was estimated at 50%.

Gold The purity of the gold recovered was 820 fine. They reported encountering lots of amalgam.

GLACIER CREEK 116C/02

K-1 Mining and Services	64°01'N 140°48'W
Water Licence: PM99-094	1998, 2000
Sixtymile Placer Area	**Site no. 105**

Operation/Location Mike and Kim McDougall continued to mine claims located on the lower to middle reaches of Glacier Creek. In 1999, their efforts were focussed primarily on work under water use licence PM97-026 (site no. 106). Their mining operation employed three miners who worked 12 hours per day.

Equipment/Function Two Caterpillar bulldozers, models D9L and D8H, with blades and rippers, were used to push pay to the excavator, contour tailings and perform reclamation. An Hitachi EX300 excavator was used to dig drains and pump ponds and feed the screen. In 2000, a Caterpillar D10N with blade and ripper stripped, forwarded material, sluiced and moved tailings.

Wash Plant The wash plant consisted of a 4-foot by 6-foot fabricated screen deck with hydraulic riffles. It had a 30-foot tailings stacker and a shuffleboard feeder. Process water was supplied at a rate of 1200 igpm using a 10-inch Sandmaster pump powered by a Deutz Diesel engine. The plant processed 75 loose yards per hour. The final clean-up of concentrates was accomplished using a long tom and a 4-yard jig.

Ground Description In 1998, an area was worked on a high-level right limit bench on claim 37773. In this area, 5 feet of material were stripped off and 6 feet were sluiced. In 2000, the operation encountered 12 to 15 feet of mud, gravel and tailings, above 2 to 3 feet of stained gravels. Two feet of stained gravels and up to 2 feet of bedrock were sluiced.

Mining Cuts In 1998, the area stripped on the right limit bench was 200 feet by 150 feet. Of this, an area 250 feet by 100 feet was sluiced. The total volume of the cut was 11,000 cubic yards. In addition, an area 495 feet long by 60 wide which had been stripped in 1997 was sluiced. The volume sluiced from this cut was 8800 cubic yards. In 2000, two cuts were mined. One was 125 feet long by an average of 50 feet in width, the other was 400 feet by 60 feet.

Water Supply and Treatment Water was obtained from an in-stream pond on Glacier Creek. Settling was accomplished in out-of-stream ponds.

Gold The purity of the gold recovered was 860 fine. The shape varied from flat to rounded.

Comments Reclamation was addressed on a progressive basis.

GLACIER CREEK 116C/02

K-1 Mining and Services Ltd.	64°03'N 140°52'W
Water Licence: PM97-026	1998, 1999, 2000
Sixtymile Placer Area	**Site no. 106**

OPERATION/LOCATION Mike and Kim McDougall started mining these claims located upstream on Glacier Creek from an area which they had been mining in previous years. There were three miners working a single 12-hour shift at the site. During 1998 and 1999, in addition to the mining operations, auger drilling and exploration trenching were performed to define reserves.

EQUIPMENT/FUNCTION In 1998, a Komatsu D155 bulldozer with a U-blade and ripper and an Hitachi UH09 excavator were used to conduct exploration work. Equipment used at the site to mine included Caterpillar bulldozers, models D9L and D8H, with blade and ripper, which pushed pay to the excavator, contoured tailings and performed reclamation work. An Hitachi EX300 excavator was used to dig drains and pump ponds and feed the screen. A Caterpillar D10N bulldozer with blade and ripper stripped, handled material to be sluiced and moved tailings.

WASH PLANT The wash plant consisted of a 4-foot by 6-foot fabricated screen deck with hydraulic riffles. It had a 30-foot tailings stacker and a shuffleboard feeder. Process water was supplied at a rate of 1200 igpm using a 10-inch Sandmaster pump powered by a Deutz Diesel engine. The plant processed 75 loose yards per hour.

GROUND DESCRIPTION In 1998, material from a high-level left limit bench 4 feet deep was mined. The depth of material stripped from a site on the lowermost claims in the block was 8 feet deep. On the upper portion of the claim block, the two areas mined had a depth of 8 feet and 13.5 feet respectively. Of the 8-foot deep cut, 3.75 feet were sluiced. Of the 13.5-foot deep cut, 60 feet were sluiced.

In 1999, the work was on claims on the upper portion of the property on a high-level left limit bench. The depths of the cuts varied. The first cut was sluicing pay which had been left at various sites on the property by previous operators. It was sluiced at the same location as the first cut in 1998. Cut 2 as listed below, required stripping of up to 15 feet of material at the back with no stripping required at the front. It was an upstream extension of the old historic "Glacier Creek" high channel, first mined in 1901 by underground methods. The next cut was stripped in previous years, leaving an unmined pay pile in the middle and cleaning of bedrock. The next cut had up to 20 feet of overburden and previous miners' strippings on it. It had been drifted at the bottom by oldtimers and had been mined on the creek side by another previous miner. Parts of this cut were in the historic and rich Glacier Creek pay channel. There was a small 100-foot section of virgin ground. The next cut, number 5 listed below, had up to 25 feet of a previous miner's tailings on it. The next cut saw an average of 30 feet stripped with a total depth up to 40 feet. The next cut required removal of up to 25 feet of tailings to reach the virgin ground. Two feet of gravel and up to 2 feet of bedrock were sluiced. The last cut was covered by 3 to 15 feet of frozen overburden. It was located adjacent to an unnamed left limit tributary at the upstream end of the property.

In 2000, the total depth varied from 6 to 18 feet. One to 2 feet of rusty red stained gravel with slide rock mud matrix lay above frozen gravel. The sluice section was 2 feet of gravel and up to 2 feet of bedrock.

MINING CUTS In 1998, a 1000-foot by 300-foot area was stripped from a high-level left limit bench. Another 850-foot by 35-foot area was stripped starting on the lower claims. Two cuts were stripped and sluiced on claims in the upper portion of the claim block. One was 320 feet by 450 feet with a total volume of 42,600 cubic yards. The other was 570 feet by 80 feet and had a total volume of 22,800 cubic yards. Of the six 4-foot wide exploration trenches dug, three were 500 feet long by 8 feet deep and three were 80 feet long by 10 feet deep.

In 1999, eight cuts were worked. Cut 1 was 100 loads hauled by dump truck for a total of 1850 cubic yards. Cut 2 was two areas, 120 feet by 145 feet each, which partially overlapped at the middle. Out of a total of 8970 cubic yards, 5100 cubic yards were sluiced. Cut 3 was 250 feet by 30 feet, 2600 cubic yards of which were sluiced. Cut 4 was 250 feet by 30 feet. Of the 8200 cubic yards handled, 3200 diluted yards were sluiced. Cuts 5, 6 and 7 were all on the edges of a deep channel where the previous miner had worked last. Cut 5 was a small triangle on the rim at the bottom of cut 4. Up to 15 feet of gravels were sluiced. Cut 6 was the left limit side pay of the deep channel. It was 250 feet by 60 feet. A total of 16,500 cubic yards were stripped and 3000 cubic yards were sluiced. Cut 7 was on the rim of the deep channel. The cut was 325 feet by 90 feet. It saw 13,000 cubic yards stripped and 7000 cubic yards sluiced. Cut 8 was 250 feet by 150 feet. On this cut 6500 cubic yards were stripped, however only the front of the cut was sluiced, with waste material mixed in for a total of 3000 cubic yards.

In 2000, one cut was mined on the upper claims. It was 250 feet by 250 feet.

WATER SUPPLY AND TREATMENT The operation sluiced using a closed re-circulation pond system set up on the left limit of Glacier Creek. Make-up water was obtained from upper Glacier Creek. The recycle rate for process water was 100%.

GOLD The purity of the gold recovered was 860 fine. The gold was coarse and stained and was very spotty throughout the cut.

COMMENTS In 1999, a pair of Levi's jeans from 1902 were recovered at the bottom end of cut 4 from an oldtimer's mine drift. Hand-hewn wooden tracks for ore cars, left behind by miners working in 1902, were found as laid down in the bottom of cut 7. The miner worked the cuts in a manner which facilitated reclamation of areas which had been previously impacted.

GLACIER CREEK 116C/02

Gordon Hagen	64°03'N 140°54'W
Water Licence: PM98-030	1998, 1999, 2000
Sixtymile Placer Area	**Site no. 107**

OPERATION/LOCATION Gordon Hagen ran a one-person operation near the headwaters of Glacier Creek, approximately 5 miles upstream from its mouth. Mr. Hagen mined an average of 10 hours per day. Glacier Creek valley is steep sided and narrow bottomed in this area.

EQUIPMENT/FUNCTION One Caterpillar 931 tracked excavator with quick-attach back hoe, was used to dig pay gravel, feed the wash plant and remove tailings. In 1998, a Komatsu D155 was brought in to strip an 80-foot by 300-foot area.

WASH PLANT A wet grizzly with 1½-inch bars fed into a 24-inch screen deck with ¾-inch punch plate. This was followed by a single sluice run 18 inches wide by 12 feet long equipped with 1¼-inch angle iron riffles. The screen deck was powered by an 11 horsepower Honda engine. A 4 by 6-inch Berkley water pump, powered by an Allis Chalmers gas engine, delivered approximately 400 igpm. Approximately 15 to 20 cubic yards of material were processed per hour.

GROUND DESCRIPTION A thin layer of organic overburden had been stripped previously from about 6 feet of pay gravel mixed with slide bedrock. Bedrock was fractured.

MINING CUTS Several small test holes were dug in 1998, and in 1999, one cut, about 30 feet wide by 150 long, was mined. In 2000, Mr. Hagen did an additional 10 hours of test sluicing.

WATER SUPPLY AND TREATMENT Water was pumped from a small in-stream reservoir and cleaned in two out-of-stream settling ponds on the right limit of the creek.

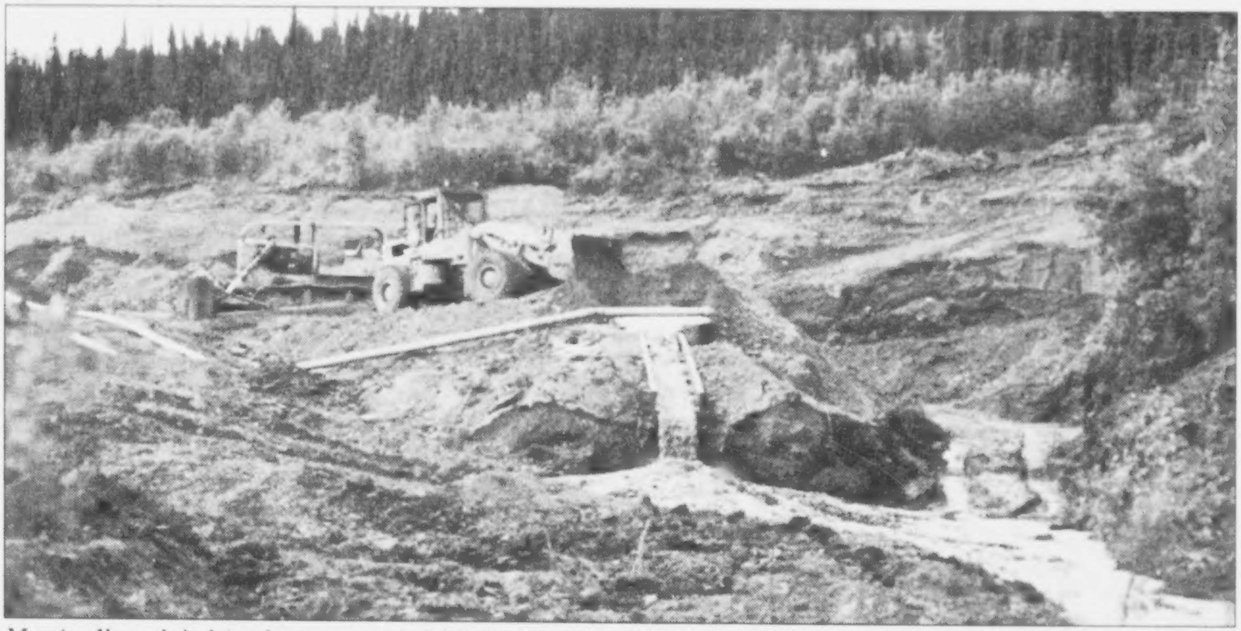
GOLD Coarse gold, mostly larger than 20 mesh, was cleaned up using a long tom and had a fineness of around 830.

COMMENTS Mr. Hagen stated that the slide rock made the ground hard to mine.

LITTLE GOLD CREEK 116C/02

Maurice Alexander	64°04'N 140°52'W
Water Licence: PM98-019	2001, 2002
Sixtymile Placer Area	**Site no. 108**

OPERATION/LOCATION Maurice (Moe) Alexander started mining at this site during the latter part of the 2001 mining season. The claims and water use licence for the site are owned by Stanley Stempien. The claims are located on the upper reaches of the Little Gold Creek which is a tributary of Big Gold



Maurice Alexander's sluice plant set up on the left limit of the Little Gold Creek valley in 2002.

Creek. During the period that Mr. Alexander worked the site, there were two miners working one ten-hour shift per day.

EQUIPMENT/FUNCTION A D7E Caterpillar bulldozer with a ripper was used for all earth moving. A Komatsu front-end loader was used to feed the wash plant in 2002.

WASH PLANT The wash plant consisted of an eight-foot by 25-foot dump box with a nugget trap and a 32-inch by 25-foot sluice run equipped with 2½-inch Hungarian riffles and ½-inch astro turf matting. The sluice run was set up at a slope of 1¾ inches per foot. Thirty-three loose cubic yards per hour were processed. A long tom, screens and pans were used for cleanups.

GROUND DESCRIPTION The area that was being mined is side pay. The operator stripped off 15 to 16 feet, 5 feet of which was mixed gravel, clay and decayed vegetation, leaving a sluice section of 6 to 7 feet of red and black stained gravel and some bedrock.

MINING CUTS Two cuts were processed in 2002. One was 250 feet by 21 feet and the other was 300 feet by 21 feet. In 2002, work continued up Little Gold Creek along the left limit of the valley past the confluence with the un-named left limit tributary which meets Little Gold Creek at claim Nicholas X.

WATER SUPPLY AND TREATMENT An 8-inch Berkley pump, powered by a 4-71 General Motors diesel engine, provided approximately 1200 igpm to the wash plant. Water was obtained from a small pond at the side of Little Gold Creek. Settling took place in a series of small ponds along the left limit side of the creek. Pond overflows were lined with plastic to minimize erosion and leakage.

GOLD Gold recovered from the site had a fineness approaching 850. Some nuggets up to two to three pennyweight were found. They were described as smooth, quartz-rich and spongy.

BIG GOLD AND LITTLE GOLD CREEKS 116C/2B

Dredge Master Gold Ltd., David Cachelin	64°03'N 140°46'W
Water Licence: PM96-022	1998, 2000, 2002
Sixtymile Placer Area	**Site no. 109**

OPERATION/LOCATION Allan Downes of Dredge Master Gold Ltd. tested a number of small cuts on Little Gold Creek. In 2002, David Cachelin processed a cut on Big Gold Creek under Dredge Master Gold Ltd.'s water use licence, using ponds left by a previous operator. He also tested an area on Little Gold Creek under Schedule III, Notification of water use without a licence. The Dredge Master camp, which he used, was also used from 1998 to 2001 by Allan Downes as a his base for hard rock exploration activity.

David Cachelin processing a cut on Big Gold Creek in 2002. Settling ponds are in the foreground.

EQUIPMENT/FUNCTION In 1998, a D7 Caterpillar bulldozer was used by Allan Downes to strip an area on Little Gold Creek. In this year, drilling was also performed on Big Gold Creek. In 2000, three more trenches were dug on Little Gold Creek using the D7 bulldozer. In 2002, Dave Cachelin used a John Deere back-hoe and a D7 bulldozer to mine two cuts and two test holes on Big Gold and Little Gold creeks. Maurice Alexander used a Komatsu front-end loader to put in a test cut on Little Gold Creek.

WASH PLANT The wash plant used at this site was a Super Sluice II.

GROUND DESCRIPTION Allan Downes did testing in areas on Little Gold Creek. The tests varied in depth from 3 to 10 feet. Mr. Cachelin was working in an area where overburden had been removed by a previous operator. His test holes were up to 20 feet deep.

MINING CUTS In 1998, the area stripped was 125 feet by 80 feet, with a total cubic yardage of 1852. A drain was also dug at this time. In 2000, the three trenches dug were 85 feet by 60 feet, 90 feet by 60 feet, and 70 feet by 60 feet, with a total volume of 4933 cubic yards. In 2002, the three cuts had an area of 295 feet by 33 feet, 65.6 feet by 88.6 feet, and 98.4 feet by 13 feet, with a total volume of approximately 4447 cubic yards. The volume moved for the test holes was 444 cubic yards and 222 cubic yards.

WATER SUPPLY AND TREATMENT Water for the test cuts on Big Gold Creek was pumped from the creek. Settling occurred in a previously mined cut.

GOLD The purity of gold recovered from Big Gold Creek is typically from 847 to 854 fine.

SIXTYMILE RIVER 115N/15,116C/02

Frank and Karen Hawker	63°59'N 140°47'W
Water Licence: PM95-071	1998, 1999, 2000, 2001
Sixtymile Placer Area	**Site no. 110**

Operation/Location Frank and Karen Hawker continued to operate at this location on the Sixtymile River. Mining took place between Miller and Big Gold creeks in the Sixty Mile valley. In 1998, there were three miners working at the site. This was increased to four for 1999, 2000 and 2001. In 2002, they returned to a crew of three miners. The miners worked 12 hours per day.

Equipment/Function A D9H Caterpillar bulldozer with a U-blade and ripper was used to strip overburden. An EX300 Hitachi excavator was used for stripping, tailings handling and ripping bedrock. A UH07-7 Hitachi excavator fed the wash plant. In 2000, a Komatsu 375 bulldozer was added to the stripping machinery. In 2001, an EX200 Hitachi excavator was added for stripping and reclamation work.

Wash Plant This operation used a 5-foot diameter New Zealand-style trommel to process approximately 80 loose yards of gravel per hour. The sluice runs were 14 feet wide and equipped with hydraulic riffles. Water was supplied at a rate of 1200 igpm by a 6 by 6-inch Indeng pump powered by a Caterpillar 3306 engine.

Ground Description This operation has been mining a sluice section which lies beneath tailings from dredging activity that took place in the Sixtymile River valley from 1929 through 1943. In some areas, the tailings are covered with waste materials from previous bench mining in the area. The sluice section has varied from 1 to 8 feet over the last five years. The waste section, which has been mostly thawed, varied from 12 to 40 feet in depth.

Frank and Karen Hawker's sluicing set up in the Sixtymile valley in 2000.

Mining Cuts In 1998, 10 cuts with an average area of 300 feet by 100 feet were mined. In 1999, there were 11 cuts mined of the same average dimensions as in 1998. In 2000, five cuts 700 feet long by 100 feet wide were processed. In 2001, another five cuts with an average size of 650 by 100 feet were mined. In 2002, three cuts were mined. The first cut in 2002 was 120,000 square feet, the second was 100,000 square feet and the third was 78,000 square feet.

Water Supply and Treatment Process water for this operation is obtained from a drainage ditch through old workings. Settling of waste water was accomplished in large ponds downstream before final discharge entered the Sixtymile River upstream from its confluence with Big Gold and Glacier creeks. The Hawkers also used a monitor to strip along the left limit bench. The water from this operation was settled and recycled at a rate of approximately 30%.

Gold Gold from this site had a purity of from 810 to 830 fine. The gold consisted of fine, flat, flaky material although there have been some small nuggets with quartz.

Comments Frank Hawker has been addressing reclamation of this site in a progressive manner. He has received Honourable Mentions for the Robert Leckie Awards for Outstanding Reclamation Practices for Placer Operations. The contoured site which replaces the dredge tailings which dominated the area are showing good revegetation.

SIXTYMILE RIVER BENCH 115N/15H

Brisebois Bros. Construction, Cecil Loney	63°59'N 140°47'W
Water Licence: PM95-095	1998, 1999
Sixtymile Placer Area	**Site no. 111**

Operation/Location In 1998, Cecil Loney mined a bench area on the left limit of the Sixtymile River downstream from Miller Creek. The work was conducted in an area which had been previously worked by Brisebois Bros. Construction. In 1999, Conrad Brisebois did some additional work in this area as well as some trenching on his nearby claims on Miller Creek.

Equipment/Function Mr. Loney used a Caterpillar 980 loader and a Komatsu D31S loader to work the site. Mr. Brisebois used a Koehring excavator and a Caterpillar loader.

Wash Plant Mr. Loney used a small test plant on the bench above the old Brisebois mine pits.

Ground Description One of the cuts excavated by Mr. Loney had a depth of 30 feet. The other went down 40 feet. Mr. Brisebois' varied in depth from 4 to 30 feet.

Cecil Loney processing material on a left limit bench of the Sixtymile River, downstream from Miller Creek in 1998.

MINING CUTS Mr. Loney put in two cuts. They were 100 feet by 100 feet and 100 feet by 200 feet. The total cubic yardage moved was 37,037. Mr. Brisebois moved a total of 55,554 cubic yards, 16,666 of which were attributed to reclamation work.

WATER SUPPLY AND TREATMENT The water supply for the cuts sluiced on the bench was the accumulated water in the old bench pits. Process was recycled at a rate of 100% in these pits.

GOLD Gold recovered from the Sixtymile River has a range of purity from 810 to 840 fine. Gold from Miller Creek has a range of purity from 827 to 857 fine.

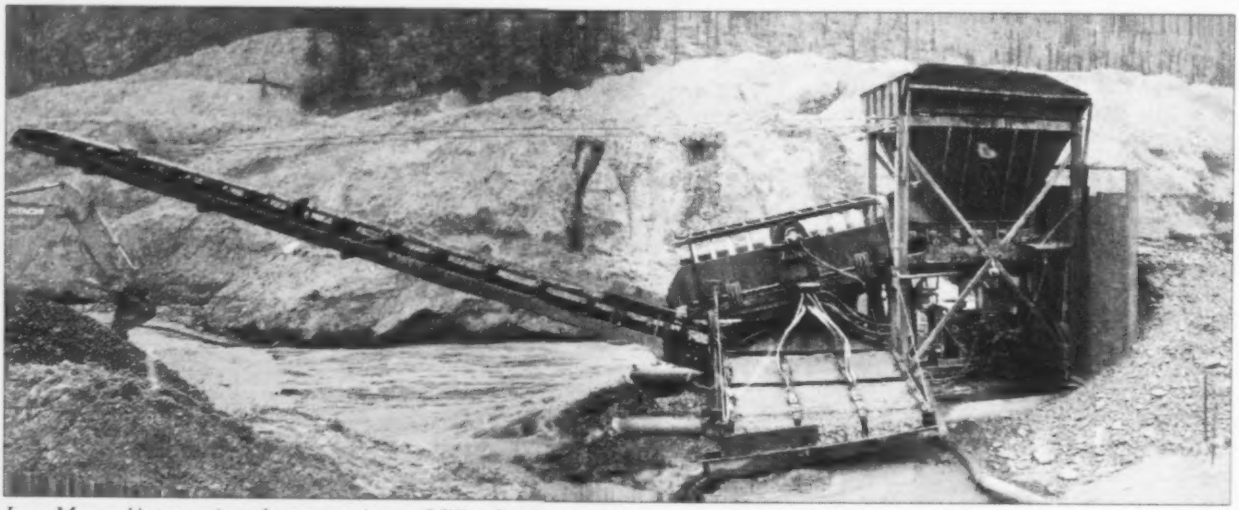
MILLER CREEK AND SIXTYMILE RIVER 115N/15H

J.M. Mining 63°59'N 140°48'W
Water Licence: PM95-109 1998, 1999, 2000, 2001, 2002
Sixtymile Placer Area **Site no. 112**

OPERATION/LOCATION Jayce Murtagh mined this property on lower Miller Creek. The operation ran with two miners, except in 2001 when there were three. The working shift was 12 hours per day, except in 2000 when it was 10 hours per day.

EQUIPMENT/FUNCTION In 1998, a Caterpillar D9L bulldozer with single shank ripper was used for stripping. A P&H excavator was used for stripping, sluicing and digging drains. A 980B Caterpillar loader was used to feed the sluice plant. In 1999, an Hitachi EX300LC excavator was used for stripping, sluicing and digging drains. In 2000, an Hitachi EX700H excavator with a 3.8-yard bucket was added for stripping and digging bedrock pay.

WASH PLANT A 4-foot by 12-foot single deck screen with steel punch plate screened material to ¾ of an inch. A hopper fed a 30-inch by 50-foot tailings stacker. Recovery was in two 8-foot wide sluice runs with hydraulic riffles. Water was supplied at a rate of 1600 igpm using a 5 by 6-inch Mission pump powered by a V8 Deutz diesel engine. The process rate was 100 loose yards per hour. In 2001, the pump was changed to a 6 by 8-inch Berkley powered by a V8 Deutz diesel engine. It provided 2500 igpm of water used to wash 110 loose yards per hour. In 2002, the pump was changed to an 8 by 10-inch Morris powered by a 3306 Caterpillar engine. The water use rate was 1800 igpm. The process rate was 100 loose yards per hour. From 1998 to 2000, concentrates were cleaned using a long tom and a Diester



Jayce Murtagh's processing plant operating on Miller Creek in 2002.

table. In 2001, the clean-up system was changed to a two-cell jig with a long tom.

Ground Description In 1998, the stratigraphic section varied with 15 to 25 feet of mixed mud and gravel layers which comprised the waste layer. This waste layer was over 6 to 9 feet of gravel. The 6 to 9 feet of gravel and 3 feet of bedrock were sluiced. The stratigraphic section of the ground, mined in 1999, was varied from 15 feet of overburden comprised of mixed black muck and gravel with 3 feet of pay gravel to 15 feet of settled muck over 15 feet of black muck above the pay gravel. The sluice section was 3 to 9 feet of gravel and 2 feet of bedrock. In 2000, the area of Miller Creek which was mined was covered by a settling pond used by Klondike Underground Mining from 1987 to 1990. The sluice section was 6 feet of gravel and 3 feet of bedrock, with 20 feet of muck and overburden removed as waste. In 2001, the area mined had been dredged in 1912. There were 6 feet of coarse tailings over 3 feet of sand and 3 feet of mud. The sluice section varied from 0 to 10 feet of gravel and 3 feet of bedrock. The ground mined in 2002 was similar to that mined in 2001. The sluice sections of the 7 cuts mined varied with pay gravel from 9 to 0 feet and the bedrock washed from 2 to 4 feet.

Mining Cuts In 1998, three cuts were mined. The first was 150 feet by 150 feet, the second was 150 feet by 100 feet and the third was 100 feet by 100 feet. Four cuts were mined in 1999. Two were 75 feet by 100 feet, one was 75 feet by 200 feet and the last was 120 feet by 300 feet. Two cuts were mined in 2000. Each cut was 150 feet by 300 feet. There were four cuts mined in the 2001 season. Each cut was approximately 300 feet long by 100 feet wide. The seven cuts mined in 2002 were 150 feet by 300 feet, 500 feet by 60 feet, 150 feet by 150 feet, 300 feet by 100 feet, 300 feet by 100 feet, 300 feet by 75 feet, and 100 feet by 100 feet.

Water Supply and Treatment Water was obtained from an in-stream pond. Effluent was settled in out-of-stream ponds. In 1999, some of the settling was in in-stream ponds and the miner recycled 50% of process water. The settling pond was 100 feet by 400 feet by 8 feet deep. In 2000, there was no recycling of process water. In 2001, both in-stream and out-of-stream effluent treatment was used with no recycling of process water. In 2002, settling was out-of-stream with 100% recycling of process water. The pond was 200 feet by 300 feet.

Gold The purity of the gold was 810 fine. One percent of the gold was +10 mesh, 19% was -10 to +20 mesh, 30% was -20 to +35 mesh and the remainder was -35 mesh. The gold had a dull colour.

Comments Work has begun on contouring overburden piles and contouring and covering tailings piles with overburden.

SIXTYMILE RIVER 115N/15H, I

Schmidt Mining	63°59'N 140°49'W
Water Licence: PM99-119, PM99-108	2001, 2002
Sixtymile Placer Area	**Site no. 113**

Operation/Location Stuart Schmidt mined an area on the right limit side of the valley beside an area previously mined by Walter Yaremcio. Mining took place between Miller and Bedrock creeks. A crew of four miners and one camp employee covered two 12-hour shifts per day.

Jayce Murtagh installing a liner in his secondary fuel containment facility on Miller Creek.

Equipment/Function A D10N Caterpillar bulldozer was used to mine at this site.

Wash Plant The wash plant used was a four-run sluice box. A 10 by 12-inch Morris pump, powered by a Caterpillar 3408 engine, provided the water required to process 150 loose yards of material per hour. Cleanups were done using a long tom, a screen, a Diester table and a wheel.

Ground Description The operation processed waste piles from previous mining, and virgin ground. In the previously untouched areas, they encountered 4 feet of muck and 8 feet of gravel. The sluice section consisted of 3 feet of the gravel and 3 feet of bedrock.

Mining Cuts In 2001, one cut 250 feet by 300 feet was mined. In 2002, three cuts were mined. Each one was 150 feet by 250 feet.

Water Supply and Treatment In 2001, process water was obtained from the Sixtymile River and treated in a 1000-foot by 200-foot pond. In 2002, the operation switched to a re-circulation system which recycled 100% of process water in a 250-foot by 300-foot pond.

Gold The purity of the gold was 830 fine. Gold recovered was generally fine-grained.

SIXTYMILE RIVER 115 N/15H,1

Northway Mining & Exploration Inc.	63°59'N 140°49'W
Water Licence: PM99-119, PM99-108	2000, 2001, 2002
Sixtymile Placer Area	**Site no. 114**

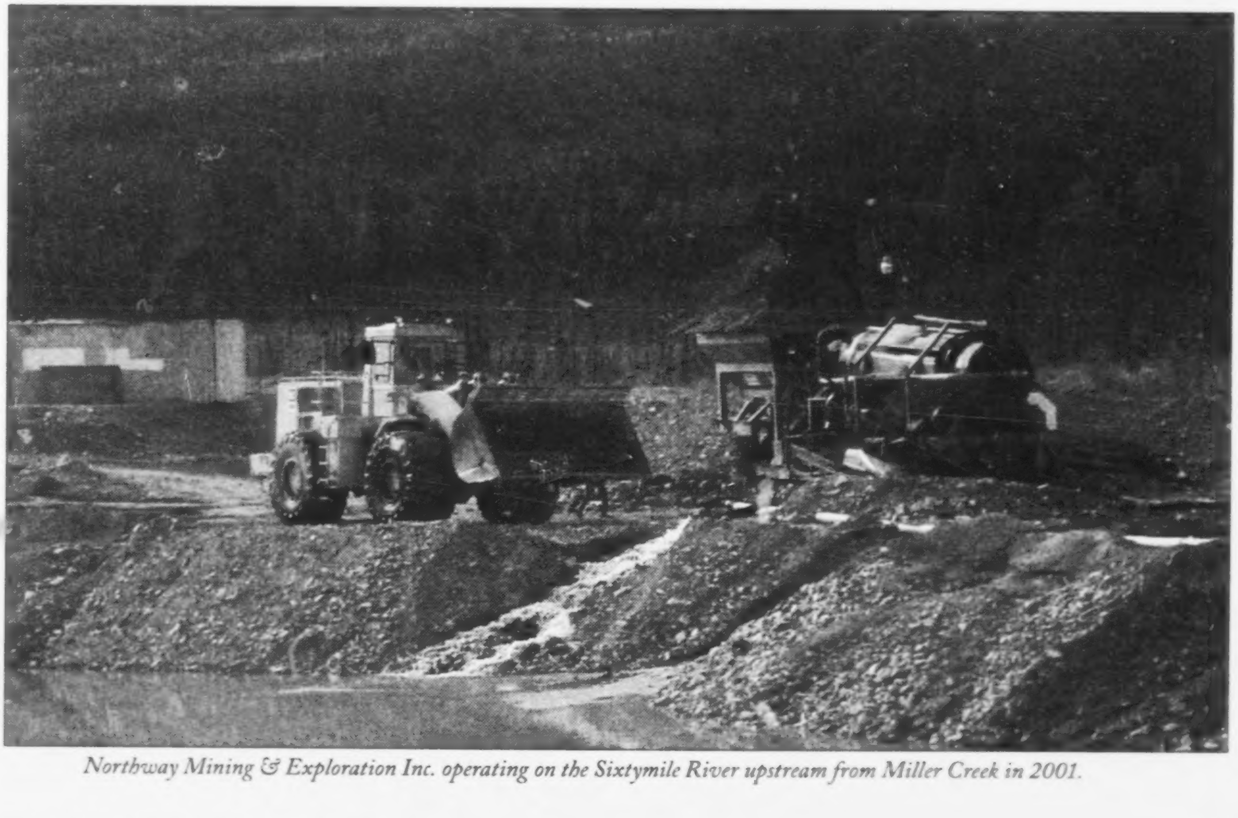
Operation/Location Don Sandberg mined on the Sixtymile River downstream from Bedrock Creek. The valley is relatively wide in this area. There were three miners and one camp employee working a 12-hour shift each day.

Equipment/Function A D9L Caterpillar bulldozer was used for stripping. A Caterpillar 988B front-end loader was used to dig pay, haul it to the plant and feed the plant. A Caterpillar 245 excavator was used to dig pay gravels. In 2001, two D-550 rock trucks were also used. In 2002, a Caterpillar D7 bulldozer was also used.

Wash Plant The wash plant was a 5-foot diameter by 20-foot long trommel that screened material to ⅝ of an inch. The sluice runs were 14 feet wide by 7 feet long with pulsating riffles.

Ground Description The operator encountered 12 feet of gravel in this area. The bottom 3 feet were sluiced.

Mining Cuts In 2001, two cuts were mined. One was 60 yards by 200 yards with a total volume of 48,000 cubic yards. The other was 50 yards by 200 yards with a total volume of 15,000 cubic yards. In 2002, two cuts were recorded. One



Northway Mining & Exploration Inc. operating on the Sixtymile River upstream from Miller Creek in 2001.

Walter Yaremcio's operation on the Sixtymile River between Bedrock and Miller Creeks in 2000.

was 400 by 50 yards and the other was 425 by 70 yards. The total volume of the two cuts was 169,250 cubic yards.

WATER SUPPLY AND TREATMENT Process water was 100% recycled in mined-out cuts. The typical pond size was 300 feet wide by 600 feet long. A long drain discharged groundwater seepage to the Sixtymile River.

GOLD The purity of the gold recovered was 830 fine.

SIXTYMILE RIVER 115N/15H,1

Walter Yaremcio	63°59'N 140°50'W
Water Licence: PM99-108	1998, 1999, 2000, 2001
Sixtymile Placer Area	**Site no. 115**

OPERATION/LOCATION Walter Yaremcio began mining at this location on the Sixtymile River upstream from its confluence with Miller Creek in 1997. The Sixtymile River valley in this area is approximately 2500 feet wide. A crew of five miners and two camp employees worked two 11-hour shifts per day.

EQUIPMENT/FUNCTION The equipment used at this site was a Caterpillar D8L bulldozer, two Caterpillar loaders, models 966C and 966F, and one Caterpillar 330 excavator. In 2000, a Caterpillar D10N bulldozer was added.

WASH PLANT A 4-foot by 8-foot screening plant with a 6-foot by 12-foot sluice area was used. The sluice run was equipped with New Zealand hydraulic riffles and ⅝ inch punch plate. An 8-inch by 10-inch pump, powered by a Caterpillar engine, provided up to 2000 igpm of water used to process 80 loose yards of material

GROUND DESCRIPTION The average depth of the ground mined was 12 feet. Some of the material encountered was frozen. Bedrock was very wavy. The sluice section consisted of 1 foot of gravel and up to 6 feet of bedrock.

MINING CUTS In 1998, an area 2000 feet long by 200 feet wide was mined. The total volume of the cut was 148,148 cubic yards. In 1999, three cuts were mined. They were 800 by 100 feet, 1000 by 200 feet and 1500 by 200 feet. The total cubic yardage was approximately 160,000. In 2000, two cuts were mined. One was 2000 feet long by 400 feet wide and the other was 700 feet long by 100 feet wide. A total of 335,184 cubic yards were mined. The operation did some test cuts in 2001 and then shut down.

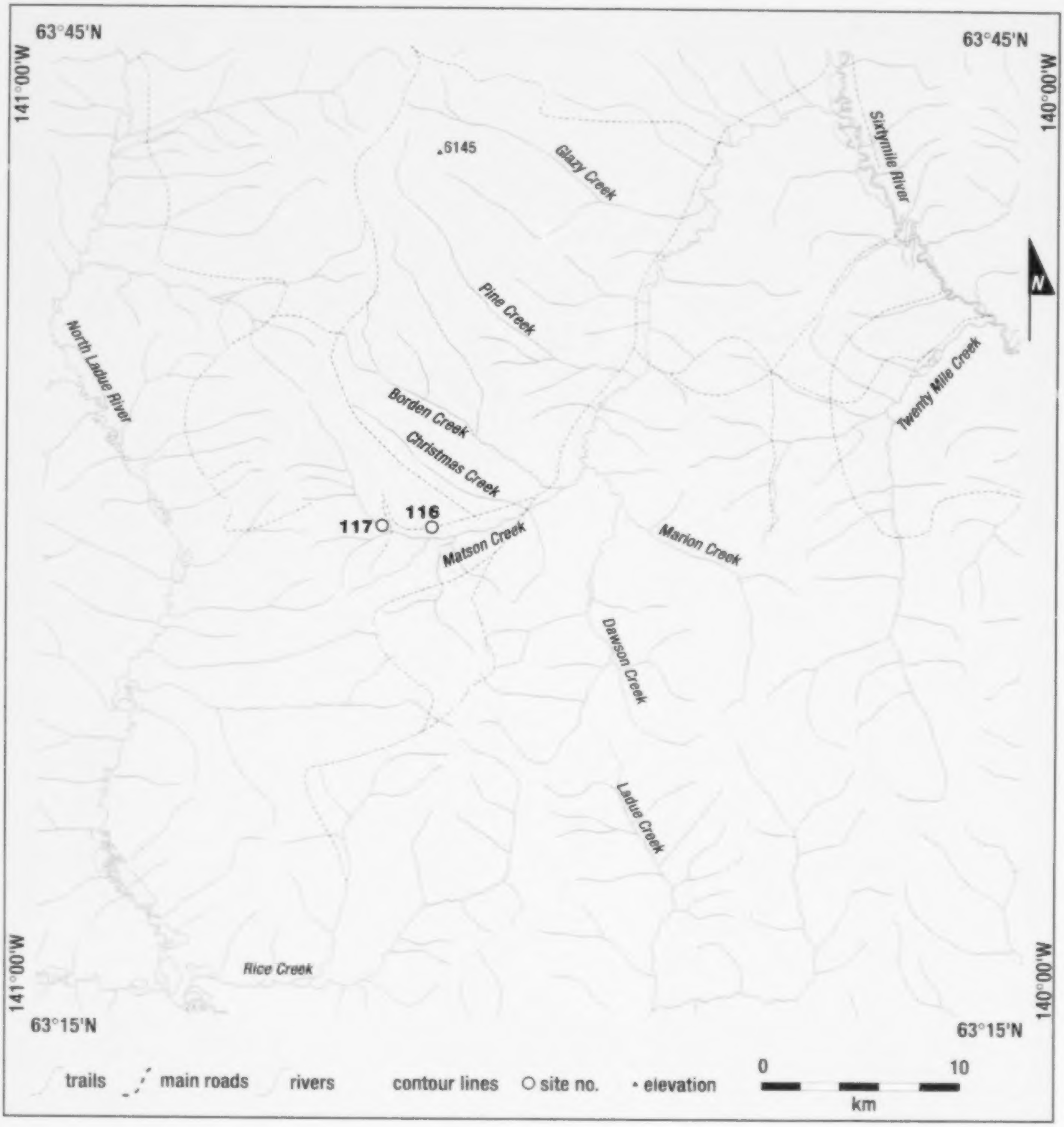
WATER SUPPLY AND TREATMENT Water used at this operation was pumped from the Sixtymile River. Settling was accomplished in out-of-stream ponds.

GOLD The gold recovered from this site was bright coloured with 60% described as being the size of rolled oats and the rest fine-grained. Fineness was 830.

60 Mile Dredge, since moved to Skagway.

MATSON CREEK
PLACER AREA

SITES 116-117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Pine Creek
North Ladue River
Twenty Mile Creek
Borden Creek
Christmas Creek
116
117
Matson Creek
Marion Creek
Dawson Creek
Ladue Creek
Rice Creek
141°00'W
63°15'N
140°00'W
63°15'N
trails
main roads
rivers
contour lines
○ site no.
• elevation
0
10
km

LEGEND

116..... Gene Fowler, Matson Creek

117..... Powers & Long, Matson Creek

MATSON CREEK 115N/7

Gene Fowler	63°29'N 140°35'W
Water Licence: PM94-089	1998, 1999
Matson Creek Placer Area	Site no. 116

OPERATION/LOCATION Gene Fowler continued to mine near the area locally known as Val D'Or in 1998 and 1999. The operation was shut down in 2000 and the restoration and removal of equipment was done.

EQUIPMENT/FUNCTION Three Caterpillar D9G bulldozers were used for stripping the cuts and three Caterpillar 621 scrapers hauled the pay gravels to the wash plant. A 350 Bucyrus Erie excavator fed the wash plant and was used to dig trenches and drains. A Hough 90 loader was used for miscellaneous yard work.

WASH PLANT The wash plant consisted of a grizzly over a hopper which fed the pay gravels onto a 30-inch wide conveyor. The pay gravels were fed at a constant rate onto a double deck screen plant. The classified gravels were washed through a single sluice run which then split into two oscillating sluice runs. The oversize material was carried off by a 36-inch conveyor stacker. A 6-inch Cornell pump, powered by a Duetz engine, supplied the 1000 igpm that was required to process between 150 and 250 cubic yards per hour.

GROUND DESCRIPTION The ground mined in 1998 had an average of 25 feet of silt/muck overlying 5 feet of gravels. Bedrock tended to be hard and solid. The cuts mined in 1999, upstream along the left limit, averaged 25 feet deep with 20 to 23 feet of muck and approximately 2 feet of gravels. Bedrock varied from solid to decomposed. The bottom foot of gravel, and from 2 feet to 5 feet of bedrock, was sluiced. Almost all of the gold was contained in the bedrock and very little in the gravels.

MINING CUTS A large cut 400 feet wide by 1200 feet long by 30 feet deep and a smaller cut 200 feet wide by 300 feet long by 30 feet deep were mined in the creek valley during 1998. Two more cuts measuring 300 feet wide by 600 feet long by 25 feet deep and 100 feet wide by 300 feet long by 25 feet deep were mined in 1999.

WATER SUPPLY AND TREATMENT Water from Matson Creek was used to fill out-of-stream ponds that were constructed from old mine pits. The water was then pumped to the wash plant and the effluent flowed back into the old mine pits and was recycled 100%. Make-up water from Matson Creek was used.

GOLD The gold recovered in the creek bottom near Val D'Or in 1998 was reported to be mainly coarse. The gold from the left limit bench tended to be mainly fine and flat. The purity of the gold was approximately 890.

MATSON CREEK 115N/10

Powers & Long	63°32'N 140°41'W
Water Licence: PM99-004	2002
Matson Creek Placer Area	Site no. 117

OPERATION/LOCATION Allan Radford with the help of two other miners and one camp personnel tested on Matson Creek main stem, downstream of forks on the left limit bench, at two sites. Testing then moved upstream onto the left fork valley bottom, then onto the right hand limit bench by the end of the air strip. A Caterpillar removed all of the equipment from the site in late fall leaving only the broken pump and processing plant on-site.

EQUIPMENT/FUNCTION A D10 bulldozer was used to strip overburden and a 235 excavator was used to dig test pits and feed the processing plant.

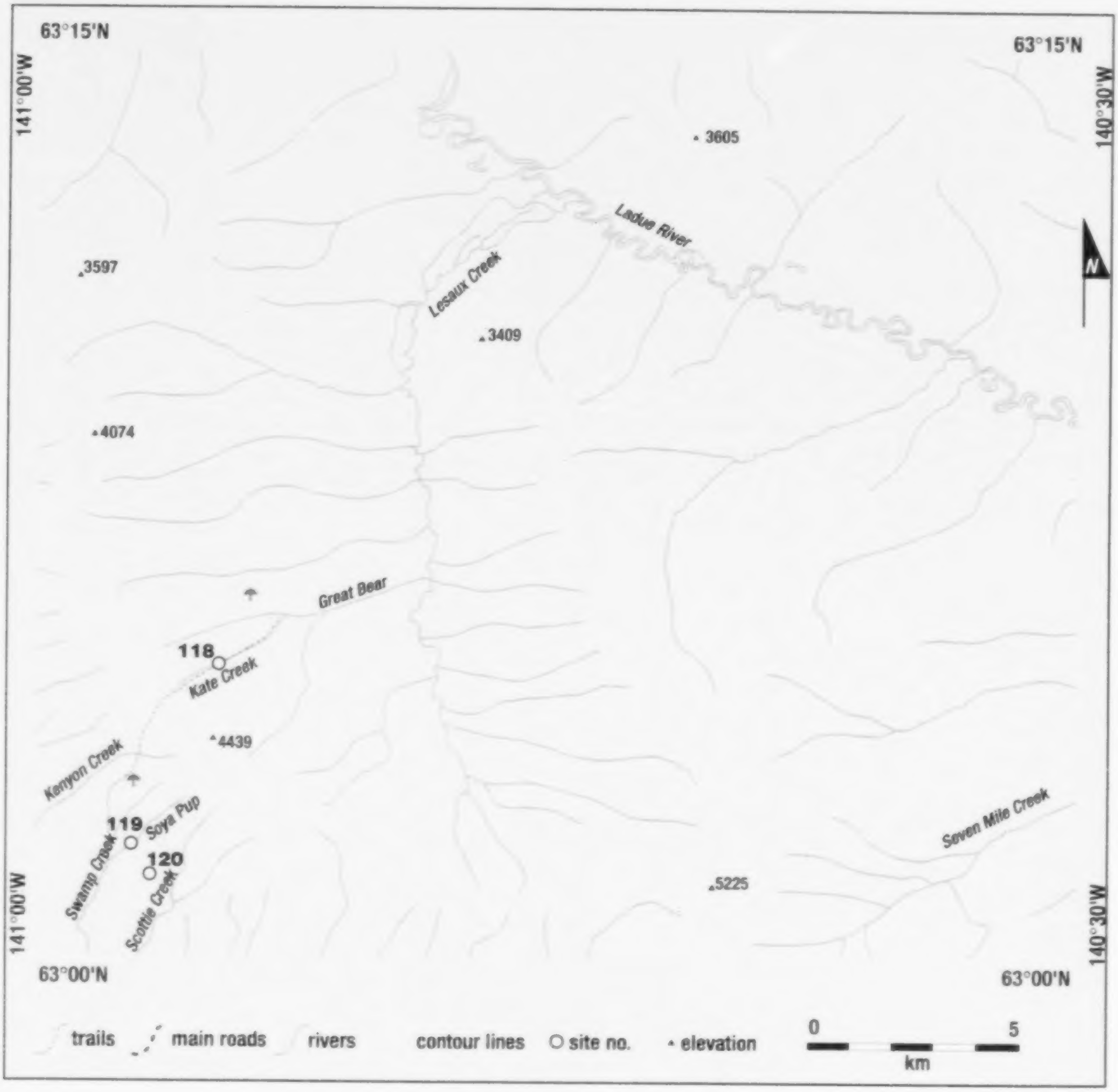
WATER SUPPLY AND TREATMENT Water was acquired from an out-of-stream reservoir at the upstream end of the first out settling pond. The effluent was treated in two out-of-stream settling ponds with a discharge back to Left Fork Matson Creek.

Gene Fowler's operation on Matson Creek.

MOOSEHORN

PLACER AREA

SITES 118-120


63°15'N
63°15'N
141°00'W
140°30'W
3605
Ladue River
3597
Lesaux Creek
3409
4074
Great Bear
118
Kate Creek
4439
Kenyon Creek
119
Soya Pup
Swamp Creek
120
Scottie Creek
Seven Mile Creek
5225
141°00'W
140°30'W
63°00'N
63°00'N
N
trails
main roads
rivers
contour lines
site no.
elevation
0
5
km

LEGEND

118..... Moosehorn Exploration, Kate Creek
119..... Moosehorn Exploration, Swamp Creek
120..... Glen Hartley, Unnamed tributary of Swamp Creek

KATE CREEK 115N/2

Moosehorn Exploration	63°05'N 140°53'W
Water Licence: PM99-044	1999, 2000, 2001
Moosehorn Placer Area	**Site no. 118**

OPERATION/LOCATION Two to four miners plus one camp personnel worked one 11-hour shift on Kate Creek and Roo Pup.

EQUIPMENT/FUNCTION A 980C loader was used to feed the processing plant and remove tailings. A D8H bulldozer was used to strip overburden, stockpile pay materials and construct dams.

WASH PLANT The processing plant consisted of a wet dump box with a ¾-inch grizzly with a three-run sluice with hydraulic riffles.

GROUND DESCRIPTION One foot of moss and 8 feet of gravel covered 51 feet of pay gravels.

WATER SUPPLY AND TREATMENT Water was acquired by a pump from an in-stream reservoir with approximately 95% re-circulation. Effluent is treated in an in-stream settling pond.

SWAMP, SOYA AND DIANA CREEKS 115N/2

Moosehorn Exploration	63°02'N 140°57'W
Water Licence: PM98-018	1999, 2000, 2001, 2001
Moosehorn Placer Area	**Site no. 119**

OPERATION/LOCATION Two to four miners and one camp personnel worked these creeks in a single 11-hour shift.

EQUIPMENT/FUNCTION D8H and D7 bulldozers were used for trenching and road building. A 225LC excavator was used for trenching and test pits. A 966C loader was used to feed the processing plant.

WASH PLANT The processing plant consisted of a wet dump box, a ¾-inch grizzly and sluice run with hydraulic riffles.

GROUND DESCRIPTION The ground varied with zero to 30 feet of black muck and four to 30 of pay gravels on bedrock.

WATER SUPPLY AND TREATMENT Water was acquired by a pump from an in-stream reservoir with approximately 95% re-circulation. The effluent was treated in a number of in-stream settling ponds.

UNNAMED TRIBUTARY OF SWAMP CREEK 115N/2

Glen Hartley	63°02'N 140°56'W
Water Licence: PM97-012	1998, 1999, 2000
Moosehorn Placer Area	**Site no. 120**

OPERATION/LOCATION Two miners and one camp personnel mined this site.

EQUIPMENT/FUNCTION Two Terex 82-40 bulldozers, a Case 1150 track loader and a Insley H1500C excavator were used to mine this site.

WASH PLANT A 5 by 10 screen deck classified material to ¾-inch minus with a 4-foot by 16-foot sluice run.

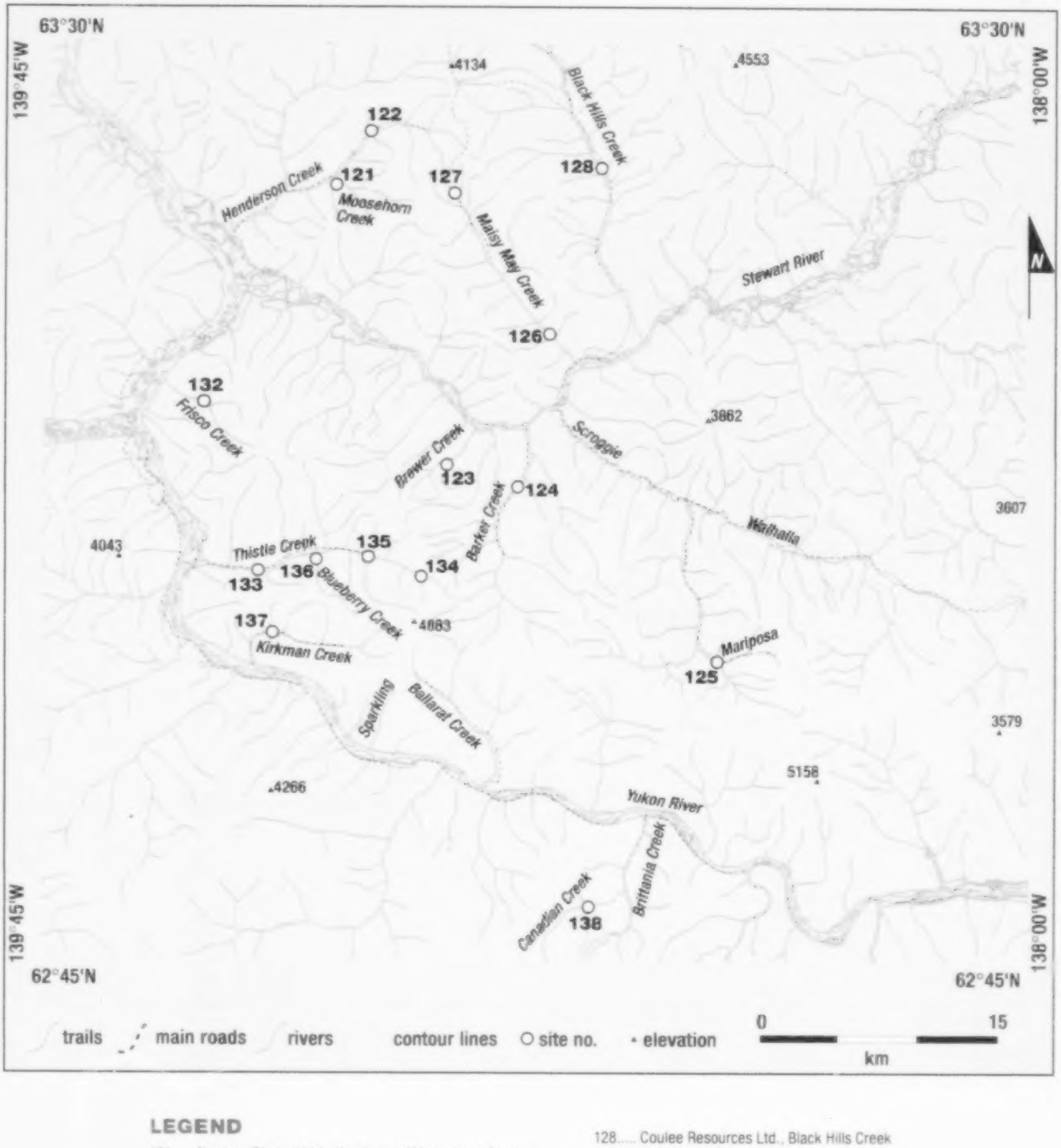
GROUND DESCRIPTION Two metres of black muck covered 1 metre of gravel.

WATER SUPPLY AND TREATMENT Water was acquired from an in-stream reservoir with 90% re-circulation. The effluent is treated in a series of three in-stream settling ponds.

Moosehorn Exploration, Swan, Soya and Diana creeks.

SOUTH KLONDIKE
PLACER AREA

SITES 121-128, 132-138


63°30'N
63°30'N
139°45'W
138°00'W
4134
4553
122
Black Hills Creek
128
Henderson Creek
121
Moosehorn Creek
127
Maisy May Creek
Stewart River
N
126
132
Frisco Creek
3862
Scroggie
Brewer Creek
123
124
Barker Creek
Walhalla
3607
4043
Thistle Creek
135
133
136
Blueberry Creek
134
137
4863
Kirkman Creek
Mariposa
125
Sparkling
Ballarat Creek
3579
5158
4266
Yukon River
Britania Creek
Canadian Creek
138
139°45'W
138°00'W
62°45'N
62°45'N
trails
main roads
rivers
contour lines
site no.
elevation
0
15
km

LEGEND

121..... Newcan Placers Ltd., Henderson/ Moosehorn Creek
122..... Shellbrite Placers Ltd., Henderson Creek
123..... KTX Mining Co. Ltd., Brewer Creek
124..... W. Fellers., Barker Creek
125..... Z. Bidrman, Scroggie Creek
126..... Clifford Goodwill, Maisy May Creek
127..... Van Every Inc., Maisy May Creek
128..... Coulee Resources Ltd., Black Hills Creek
132..... E. Stretch, Frisco Creek
133..... S. Schmidt, Thistle Creek
134..... Fell Hawk Placers, Thistle Creek
135..... M. Sager, Thistle Creek
136..... M. & J. Hughes, Thistle Creek
137..... Fell Hawk Placers, Kirkman Creek
138..... Britannia Pacific Mining Ltd., Canadian Creek

HENDERSON AND MOOSEHORN CREEKS 115O/6

Newcan Placers Ltd.	63°23'N 139°14'W
Water Licence: PM94-090, PM96-002	1998, 1999
South Klondike Placer Area	**Site no. 121**

OPERATION/LOCATION Bruce Cowan operated on Henderson Creek throughout 1998 and on Moosehorn Creek during 1999. A single employee and a camp cook ran a single 12-hour shift in 1998. The operation was increased in size to three miners and a camp cook for 1999. While mining on Moosehorn Creek, two 12-hour shifts were run.

EQUIPMENT/FUNCTION A Caterpillar D10N and a Caterpillar D9L were used for stripping overburden, pushing pay gravels to the wash plant and doing the restoration work. An Hitachi UH143 excavator and an Hitachi EX200 excavator were used to feed the sluice plant and for digging ditches and drains. An Hitachi EX400-5 excavator was added to assist in stripping on Moosehorn Creek in 1999.

WASH PLANT The wash plant consisted of a hopper feeding into a 5-foot diameter trommel which classified the pay to ½-inch minus. The oversize material was carried off with a 35-foot conveyor and stacked. The ½-inch minus material was washed through a single sluice run 12 feet wide by 8 feet long. The first 2½ feet of the run was equipped with hydraulic riffles and the remainder of the run was lined with matting and 1-inch flat bar. A 4-inch Ajax pump, powered by an Isuzu engine, supplied the 1000 igpm needed to sluice approximately 70 cubic yards per hour.

GROUND DESCRIPTION The ground on Henderson Creek averaged 10 feet deep, with 8 feet of frozen black muck overlying 2 to 3 feet of gravel. The cuts on Moosehorn Creek averaged 15 feet deep, with a 10-foot layer of mixed frozen black muck and sand overlying 2 feet of sand and 2 to 3 feet of gravel. All of the gravels and 1 to 2 feet of the bedrock was sluiced.

Newcan Placers Ltd., Henderson and Moosehorn creeks.

Bruce Cowan.

MINING CUTS Two cuts were sluiced on Henderson Creek during 1998. One cut measured 400 feet long by 100 feet wide and the other measured 500 feet long by 100 feet wide. Two cuts were sluiced on Moosehorn Creek in 1999. A large cut, 1500 feet long by 300 feet wide, and a second cut, 400 feet long by 100 feet wide, were processed.

WATER SUPPLY AND TREATMENT Water for sluicing on Henderson Creek came from Henderson Creek and the effluent was treated in out-of-stream settling ponds. Due to water shortages, a partial recycle system was needed on Moosehorn Creek. A finishing pond on Henderson Creek was used while sluicing on Moosehorn Creek.

GOLD The gold on Henderson Creek ranged from fine to coarse and had an average purity of 760 fine. The gold on Moosehorn Creek tended to be more coarse with some small nuggets and had a purity of 820 fine.

COMMENTS Bruce Cowan ceased operations in 1999 due to health problems. Mr. Cowan was born in New Zealand and emigrated to Canada with his wife and family in 1990, making the Yukon their home. He became a Canadian citizen in 1999. He was involved in the placer mining industry and was a director of the KPMA. Mr. Cowan passed away August 22, 2000.

HENDERSON AND MOOSEHORN CREEKS 115O/6

Shellbrite Placers Ltd.	63°25'N 139°15'W
Water Licence: PM96-043	1998, 1999, 2000, 2001, 2002
South Klondike Placer Area	**Site no. 122**

OPERATION/LOCATION Dave McInroe continued mining on Henderson Creek and Moosehorn Creek, a left limit tributary of Henderson Creek, from 1998 through 2001. The mining occurred on Moosehorn Creek in 1998 and at several locations on Henderson Creek upstream of Moosehorn Creek in 1999 through 2002. A crew of two or three miners ran a single 12-hour shift.

EQUIPMENT/FUNCTION A Komatsu D155 bulldozer was used for stripping cuts, stockpiling pay gravels for sluicing and handling tailings. A Caterpillar D9L bulldozer was added in 2000 for stripping. An Hitachi UH143 excavator, an Hitachi UH083 and an EX300 excavator were used to feed the sluice plant, cleaning bedrock, digging drains and other various jobs.

WASH PLANT A New Zealand-style wash plant was used with a hopper feeding into a 5-foot diameter trommel which classified the pay gravels to ½-inch minus. The classified material was washed through sluice runs 12 feet wide by 16 feet long that were equipped with hydraulic riffles and used expanded metal and Nomad matting. The oversize material was carried off and stacked with a 35-foot pivoting conveyor. A 4-inch Ajax pump, powered by an Isuzu engine, or a 6-inch Indeng pump, powered by an Isuzu engine, supplied the 1000 igpm needed to sluice between 70 and 100 cubic yards per hour.

Shellbrite Placers Ltd. on Henderson Creek.

GROUND DESCRIPTION Moosehorn Creek had between 3 and 5 feet of frozen muck overlying 3 feet of gravel. Bedrock was usually found to be flat and slabby. All of the gravels, and approximately 1 foot of bedrock, were sluiced. Dredge tailings and old bulldozer ramped tailings were sluiced at several locations throughout 1999. The cuts that were mined in 2000 had an average of 3 to 5 feet of frozen muck overlying 3 feet of gravel. As on Moosehorn Creek, all of the gravels and approximately 1 foot of the flat slabby bedrock were sluiced. The mining in 2001 occurred along the right limit of Henderson Creek. An average of 15 feet of frozen muck overlay 2 feet of sand and 4 feet of gravel. The cuts processed in 2002 had an average of 10 feet of black muck over top of 3 feet of gravel. The lower 3 feet of gravel and the first foot of bedrock were sluiced in 2001 and 2002.

MINING CUTS Two cuts measuring 800 feet long by 300 feet wide and 600 feet long by 300 feet wide were mined on Moosehorn Creek in 1998. Tailings from several sites on Henderson Creek were processed in 1999. Three cuts measuring 720 feet long by 90 feet wide, 720 feet long by 120 feet wide and 300 feet long by 80 feet wide were mined on Henderson Creek in 2000. Three more cuts measuring 1000 feet long by 120 feet wide, 700 feet long by 90 feet wide and 450 feet long by 60 feet wide were mined on Henderson Creek in 2001. Three similar-sized cuts were sluiced in 2002.

WATER SUPPLY AND TREATMENT Water from Moosehorn Creek was used for sluicing on Moosehorn Creek. A partial recycle system was used, with final effluent treatment in an out-of-stream pond on Henderson Creek. A partial recycle system was also used for the mining on Henderson Creek in 1999 and 2000. Water was not recycled in 2001 and 2002. Settling was done in out-of-stream dredge tailings or old mine pits on Henderson Creek.

GOLD The gold from Moosehorn Creek was reported as primarily fine with a few small nuggets. The purity ranged from 790 to 800 fine. The gold from Henderson Creek was also fine and ranged from a purity of 730 to 780 fine. The gold was usually brightly coloured, round and smooth. A few small nuggets were recovered.

BEWER CREEK 1150/3

KTX Mining Co. Ltd.	63°09'N 139°03'W
Water Licence: PM97-053	1998, 1999, 2000, 2001, 2002
South Klondike Area	**Site no. 123**

OPERATION/LOCATION In the years 1998 through 1999, any activity on this site has taken place on the left fork of Brewer Creek, immediately upstream of the confluence of the forks. This work consisted of limited stripping and sluicing. In 2002, a test pit was dug on the left hand limit of Brewer

Creek, approximately 1 kilometre downstream from the forks on the main stem.

Water Supply and Treatment A gravity feed ditch provided water to a small reservoir with a pump feeding the processing plant. A small settling pond treated the effluent prior to flows returning to the main stem of Brewer Creek.

BARKER CREEK 1150/2

W. Fellers	63°43'N 139°56'W
Water Licence: PM02-270	2002
South Klondike Area	**Site no. 124**

Operation/Location Mr. Fellers started a small cut on the left hand limit of Barker Creek in the valley bottom, immediately adjacent to the creek and camp.

Equipment/Function Two bulldozers are used for stripping overburden and stockpiling pay materials for the excavator to feed the processing plant.

Water Supply and Treatment Water was acquired by a gravity feed ditch to a small pump pond. A pump was used to feed the processing plant. The effluent was treated in one out-of-stream settling pond prior to the flow returning to Barker Creek.

Comments Little time was spent at this site in 2002. The site was set up with limited yardage processed when the equipment was removed to Thistle Creek.

SCROGGIE CREEK AND MARIPOSA CREEK 115J/15

Z. Bidrman	63°03'N 134°35'W
Water Licence: PM01-254	1998, 1999, 2000, 2001, 2002
South Klondike Placer Area	**Site no. 125**

Operation/Location Mr. Bidrman, with the assistance of one other miner and one camp personnel, mined selected reaches of the main stem of Scroggie Creek approximately from the camp to Mariposa Creek during the 1998, 1999 and 2000 seasons. The mining activity during 2001 and 2002 took place at the confluence of Scroggie Creek and Mariposa Creek with some limited mining on the main stem of Mariposa Creek.

Equipment/Function A Komatsu 375 bulldozer was used to strip overburden and stockpile pay materials for the excavator to feed to the processing plant. A Komatsu WA500 loader was used to remove tailings.

Wash Plant The processing plant consisted of a wet grizzly with a vibrating deck, to the sluice runs with hydraulic rifles.

Water Supply and Treatment Water was acquired from a small in-stream reservoir by various-sized pumps which supplied the processing plant. The effluent was treated in a primary polishing pond and flowed into a settling pond, then was discharged back into Scroggie Creek or Mariposa Creek.

W. Fellers' operation on Barker Creek.

Bidrman operation on Scroggie Creek.

"THE" GOLD MACHINE

Clifford Goodwill on Maisy May Creek.

MAISY MAY CREEK 115O/6, 7

Clifford Goodwill	63°18'N 138°54'W
Water Licence: PM99-151	2001, 2002
South Klondike Placer Area	**Site no. 126**

OPERATION/LOCATION Clifford Goodwill ran a two-person mining operation on Maisy May Creek, a right limit tributary to the Stewart River, in 2001 and 2002. The operation was located approximately 3½ miles upstream from the confluence with the Stewart River.

EQUIPMENT/FUNCTION Two Caterpillar D9N bulldozers equipped with rippers and U-blades were used to strip overburden. An Ex200 excavator was used to dig pay and feed the wash plant. A Caterpillar 966 loader was used to remove tailings.

WASH PLANT A large steel hopper fed into a 3-foot wide by 8-foot long screen deck which classified the pay gravels down to minus 2 inch. The classified gravels were directed into a 3½-foot diameter by 20-foot long trommel with reverse spirals and then sluice runs 1½ feet wide by 12 feet long. A 6-inch water pump powered by a 5.9 litre Cummings engine supplied water to process approximately 60 cubic yards per hour.

GROUND DESCRIPTION An average of 6 feet of frozen black muck overburden was stripped from on top of 12 feet of gravels. The bottom 2 feet of gravel and about 1 foot of shale bedrock were sluiced.

MINING CUTS One cut, measuring approximately 150 feet wide by 1800 feet long, was cleared and partially stripped. A second cut, measuring 200 feet wide by 600 feet long, was also cleared and partially stripped in 2001. Bedrock was reached in only one portion of the second cut. Testing at several locations was done but poor results stopped the sluicing at those locations. Bulk testing was done in 2002.

WATER SUPPLY AND TREATMENT Water was pumped from Maisy May Creek and the effluent was settled in an out-of-stream settling pond prior to discharge back into the creek.

GOLD The gold was reported to be flat, smooth and bright. The purity was unknown as no gold was sent for processing.

MAISY MAY CREEK 115O/6

Van Every Inc.	63°23'N 139°01'W
Water Licence: PM94-091	1998
South Klondike Placer Area	**Site no. 127**

OPERATION/LOCATION Richard Fitch ran a two-person operation for one season only under this licence in 1998. The mine site was located on a narrow section of Maisy May Creek near the top of the watershed.

EQUIPMENT/FUNCTION One Caterpillar D7 bulldozer was used for stripping overburden and digging pay gravel. An International excavator with a one-yard bucket was used to feed the wash plant.

WASH PLANT An 8-foot Derocker classified the pay gravels before being sluiced through three 18-inch wide by 21-foot long sluice runs. The centre sluice run used ⅞-inch punch plate and matting. The side runs were lined with 1-inch angle iron riffles, expanded metal and Nomad matting for the first 10 feet. The end of the side runs used expanded metal over

Nomad matting. An 8-inch by 6-inch, high-pressure water pump, powered by a Detroit 671 diesel engine, supplied water to process about 30 cubic yards per hour. A 4-inch water pump, powered by a diesel engine, was used to dewater the mine cut.

Ground Description The area mined varied from 8 feet deep up to 20 feet deep. Slide rock up to 3 feet in diameter was encountered. Bedrock was solid and difficult to handle.

Mining Cuts A test cut approximately 120 feet long by 40 feet wide was partially sluiced in 1998.

Water Supply and Treatment Water was pumped from an in-stream reservoir and was settled in a series of in-stream settling ponds.

Gold The gold recovered was mixed with fine, medium and coarse flakes. The purity was reported as 860 fine.

BLACK HILLS CREEK 115O/7

Coulee Resources Ltd. 63°22'N 138°46'W
Water Licence: PM99-043 1998, 1999, 2000, 2001, 2002
South Klondike Placer Area **Site no. 128**

Operation/Location Joel White of Coulee Resources Ltd. continued his large-scale mining operation in Black Hills Creek valley, employing six miners and one camp personnel, working a daily shift of 12 hours in 1998. In 1999 and 2000, nine miners worked two 12-hour shifts which increased to 13 in 2001. Coulee Resources moved most of its operation to Sulphur Creek in 2002, although three miners, two mechanics and a cook remained at the site to complete one cut and perform some reclamation work.

Equipment/Function A 455 Komatsu and Caterpillar D9H bulldozers were used in 1998, along with a PC400 Komatsu excavator, to strip black muck, stockpile pay gravels and feed the sluice plant. A 455 Komatsu bulldozer and PC200 excavator were added in 1999. By 2000, another D8L Caterpillar bulldozer was put into play. The fleet increased in 2001 comprising of three 455 Komatsu bulldozers, a PC200, a PC400 and a PC300 Komatsu excavator, plus a D8L and a D9H Caterpillar bulldozer. Most of the equipment was sent over to Sulphur Creek in 2002.

Wash Plant A 6 by 20-foot Clemroe screening plant with a 42-inch hydraulic feeder, a 36-inch hoist conveyor and a 36-inch electric stacking conveyor were attached to six 5 by 20-foot sluice runs which were sloped at 1½-inch per foot. The pump was a 12 by 14-inch Worthington, powered by a Caterpillar D9G diesel engine, capable of processing between 250 and 320 cubic yards per hour at 5000 igm. Final cleanups were performed with a jig and a Diester table.

Ground Description The ground was completely frozen. Eight to 10 feet of black muck overlay 3 to 4 feet of sand and gravel, covering 3 to 4 feet of pay gravels. As mining progressed, bedrock changed from hard and chunky to a soft schist interspersed with limestone stringers. Gravels were generally

Coulee Resources Ltd. on Blackhills Creek.

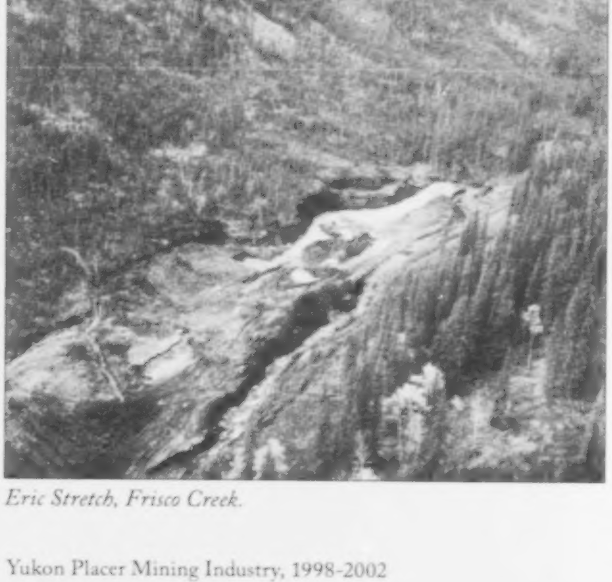
well-rounded and angular in shape. Lots of coarse bouldery material was available for the various mining and water structures required. In the deeper ground, the composition was about 28 feet of black muck and 12 feet of gravels. Approximately 1½ feet of bedrock were sluiced.

Mining Cuts Five pits were excavated in 1998, averaging 300 by 325 feet in size. This increased to 10 pits in 1999 which were about 200 by 400 feet. Only 9 pits 300 by 325 feet were mined in 2000 which jumped to 11 pits in 2001 of a similar size. In 2002, only 1 cut was made, about 750 long by 250 feet wide. Overburden to bedrock ranged from 12 feet on the creek side of the bench to 40 feet deep. Contouring of disturbed areas was carried out each fall with some black muck redistributed over the sloped tailings.

Water Supply and Treatment A 10,000-foot compensation channel, following the original Blackhills Creek channel for half its length, allowed the diversion of the creek to the right limit of the valley. Water was acquired from an intake ditch accessing the creek, and effluent was discharged into a primary settling facility which, using the creek as a conduit, joined a secondary facility downstream. The settling facilities were constructed in Queenstake's old valley mine cuts. All mine works are out-of-stream during spring freshet.

Gold Fines ranged from 77 to 81%. Gold was generally coarse, with smooth rounded nuggets. Out of an average cleanup of 340 ounces, mesh sizes ran at 67.05 (raw ounces) at -30; 122.50 at -20; 67.30 at -10; 46.15 at +10 and 36.50 at +20.

Comments Reclamation work at this site was progressive in nature.



Eric Stretch, Frisco Creek.

FRISCO CREEK 1150/3

Eric Stretch	63°12'N 139°30'W
Water Licence: PM97-075	1998, 1999, 2000, 2001, 2002
South Klondike Placer Area	**Site no. 132**

Operation/Location Camp is located at the confluence of Frisco Creek and the Yukon River. The mine site is located approximately 2 kilometres upstream on Frisco Creek. The first cut was made in 1998, with pay materials stockpiled and then sluiced back into the original cut which was used as a settling pond for the next years. Very limited mining took place in 1999, 2000 and 2001. A new settling pond was constructed in 2001 and the creek channel was diverted to the left hand limit of the operation, by-passing the mine site. The only activity evident in the 2002 season was the addition of two cabins at the camp and the arrival of new equipment and materials marshalled at the camp.

Equipment/Function A bulldozer was used to strip overburden and stockpile pay materials, with an excavator feeding the processing plant.

Water Supply and Treatment Water was acquired by pump and a small in-stream pump pond. Effluent was sluiced into a single small out-of-stream settling pond, with a discharge back to Frisco Creek.

THISTLE CREEK 1150/3

S. Schmidt	63°03'N 139°27'W
Water Licence: PM97-070	1998, 1999, 2000, 2001, 2002
South Klondike Placer Area	**Site no. 133**

Operation/Location One to five miners and one to three camp personnel mined Thistle Creek from 1998 to 2002. Sluicing in the main valley bottom and hydraulic stripping of Edas bench took place in 1998, 2001 and 2002. During 1999 and 2000 sluicing did not occur, only stripping of Edas bench.

S. Schmidt, Thistle Creek.

Equipment/Function A D10 bulldozer was used to strip and push into the processing plant in the 1998, 1999 and 2001 seasons. In 2002, two D10 bulldozers were used to strip and push to an Hitachi EX 700 excavator which fed the processing plant. A pump and monitor were used to hydraulic strip Edas bench during each year.

Wash Plant A triple-run sluice box was used in the 1998 and 2001 seasons. In the 2002 season, a screen deck with Z box and a five-run sluice was used to process materials.

Water Supply and Treatment Water was acquired directly from Thistle Creek by a pump for both the monitor and processing plant. Effluent was treated in a single settling pond prior to discharging back into Thistle Creek.

THISTLE CREEK 115O/3

Fell-Hawk Placers	63°03'N 139°05'W
Water Licence: PM00-170	1999, 2000, 2001
South Klondike Placer Area	**Site no. 134**

Operation/Location Joe and Wendy Fellers moved from Kirkman Creek during the 1999 season. Two miners and one camp personnel ran a daily shift of 12 hours. In 2000 and 2001, four miners and two camp personnel were employed.

Equipment/Function In 1999, a 235 Caterpillar excavator and D8L bulldozer with U-blade and a single shank ripper were used to strip overburden, dig tailings ponds and push pay gravels. In 2000, a D9L Caterpillar bulldozer with U-blade and a double shank ripper was added.

Wash Plant The same wash plant set up was used at this site as at Kirkman Creek (site no. 137).

Ground Description The downstream ground was composed of 2 to 6 feet of frozen black muck, over 7 to 8 feet of average-sized gravels, while the upstream gravel layer was anywhere from 5 to 9 feet in depth. Bedrock was mostly blocky and contained some quartz veins. Two feet of the gravels and 4 feet of the decomposed bedrock were sluiced

Mining Cuts In 1999, two mining cuts were made, 600 feet by 100 feet and 80 feet by 600 feet. Four cuts were made on the upstream claims in 2000, averaging 1400 feet by 50 feet in size. In the downstream mine area, three cuts were made, 300 by 75 feet, 300 by 150 feet, and 400 by 80 feet. In 2001, the operation moved upstream to the head waters of Thistle Creek. The valley was considerably narrower and five cuts were made, totalling a length of 2400 feet by about 65 feet wide.

Water Supply and Treatment Water was acquired from Thistle Creek. On the lower claims, it was possible to do out-of-stream settling, but once the operation moved to the upper portion, in-stream settling facilities were constructed with 100% recycle.

Gold The pay gravels yielded a beautiful, bright gold, with smooth, rounded edges. There were a number of nuggets with little or no quartz in them whatsoever. Mesh sizes on the gold recovered from upper Thistle were 18% at plus four, 10% at plus six, 27% at plus 10, 25% at plus 16 and 20% at minus 16. The lower valley produced 16% at plus four, 13% at plus six, 31% at plus 10, 18% at plus 16 and 22% at minus 16. Fines averaged between 860 and 870.

Comments Reclamation at this site is done on an ongoing basis with overburden piles being contoured to the valley sides and settling ponds removed. A great number of old

Fell-Hawk Placers, Thistle Creek.

shafts and a few open cuts remained from the oldtimers, as well as a few log cabins in various states of decay.

THISTLE CREEK AND LULU GULCH 1150/3

M. Sager	63°01'N 139°04'W
Water Licence: PM99-016	2000, 2001
South Klondike Placer Area	**Site no. 135**

OPERATION/LOCATION Mr. Sager worked the area on the right hand limit of Thistle Creek at the confluence with Lulu Gulch in the 2000 and 2001 seasons. There was not any activity in the 2002 season.

WATER SUPPLY AND TREATMENT Water was acquired by pump with intake in an in-stream reservoir. Effluent discharges into one large settling pond where it percolated into the ground without a discharge to Thistle Creek.

THISTLE CREEK AND BLUEBERRY GULCH 1150/3

Mike and Jay Hughes	63°15'N 139°12'W
Water Licence: PM98-056	1998, 1999, 2000
South Klondike Placer Area	**Site no. 136**

OPERATION/LOCATION Two miners and two camp personnel worked a 12-hour shift to mine Blueberry Creek.

EQUIPMENT/FUNCTION A 980C loader, and D8K and D9H bulldozers were used for stripping overburden, pushing to the processing plant and tailings removal.

WASH PLANT The processing plant was a 10-foot derocker with sluice runs.

GROUND DESCRIPTION The first six inches to 1-foot consisted of trees and moss. Black muck covered the next 5 feet, then gravels for 5 feet with a 3 to 5-foot section of pay materials.

MINING CUTS Two cuts were mined per season with the approximate dimensions of 300 feet by 100 feet by 10 feet.

WATER SUPPLY AND TREATMENT Water was acquired from an in-stream reservoir/settling pond on Blueberry Gulch with approximately 85% re-circulation. The main settling pond was located on the left hand limit of Thistle Creek, just downstream with the confluence with Blueberry Gulch.

COMMENTS There has not been any activity at this location for the past two years.

KIRKMAN CREEK 115O/3

Fell-Hawk Placers	63°00'N 139°20'W
Water Licence: PM99-134,LP00156	1998, 1999
South Klondike Placer Area	**Site no. 137**

OPERATION/LOCATION Two miners and one camp personnel worked one 12-hour shift daily at this site.

EQUIPMENT/FUNCTION A Caterpillar 235 excavator and a Caterpillar D9L bulldozer with U-blade and a double shank ripper were used to strip overburden, push pay gravels and construct ponds, roads and berms.

Fell-Hawk Placers, Kirkman Creek.

Wash Plant A screening plant with a 5-foot by 8-foot run lined with riffles dropped the gravels into a boil box. From there, the pay was sent through a divided 10-foot by 20-foot sluice run with the top 5 feet expanded metal and the bottom 15 feet having 1-inch riffles, with 2-inch spacings over nomad matting. A 10 by 10-inch pump, powered by a Caterpillar 320E diesel engine and capable of 2400 igpm processed about 200 cubic yards per hour. Final cleanups were conducted by running the pay through a double-cell Spriggs Jig twice, magnetizing and picking clean.

Ground Description Six feet of frozen black muck interspersed with huge boulders covered 15 feet of gravels. Two feet of gravel and 2 feet of the blocky decomposed bedrock were sluiced. The waste sections were used to build ponds and roads and the remainder was ramped up the sides of the valley.

Mining Cuts In 1998, three cuts were made. One cut measured 200 by 300 feet and the other two averaged 150 feet by 400 feet. Three additional cuts were mined in 1999, approximately 150 feet by 400 feet in size.

Water Supply and Treatment Kirkman Creek and seepage supplied water for the reservoir pond. Discharge was directed back to the recycle pond and then into two out-of-stream settling ponds before returning to the creek.

Gold The appearance of the gold recovered was very bright with a blackish tinge to the nuggets. Sixteen percent of the gold was minus 16 mesh size, 29% was plus 16, with 34% at plus 10, 10% at plus 6 and 11% at minus 11%. Fineness was 840.

CANADIAN CREEK 115J/15

Britannia Pacific Mining Ltd.	62°48'N 138°50'W
Water Licence: PM01-253	1998, 1999, 2000, 2001, 2002
Canadian Creek Placer Area	**Site no. 138**

Operation/Location Allen Radford, with the assistance of two to four other miners and one camp personnel, mined Canadian Creek starting approximately ½ kilometre to 1 kilometre upstream from the confluence with Britannia Creek on the left hand limit and then up an unnamed pup at the upper-most mined area.

Equipment/Function D10 and D11 bulldozers were used for stripping overburden, stockpiling pay materials and pushing to the excavator which feeds the processing plant. An additional excavator and loader were used for stripping and hauling tailings.

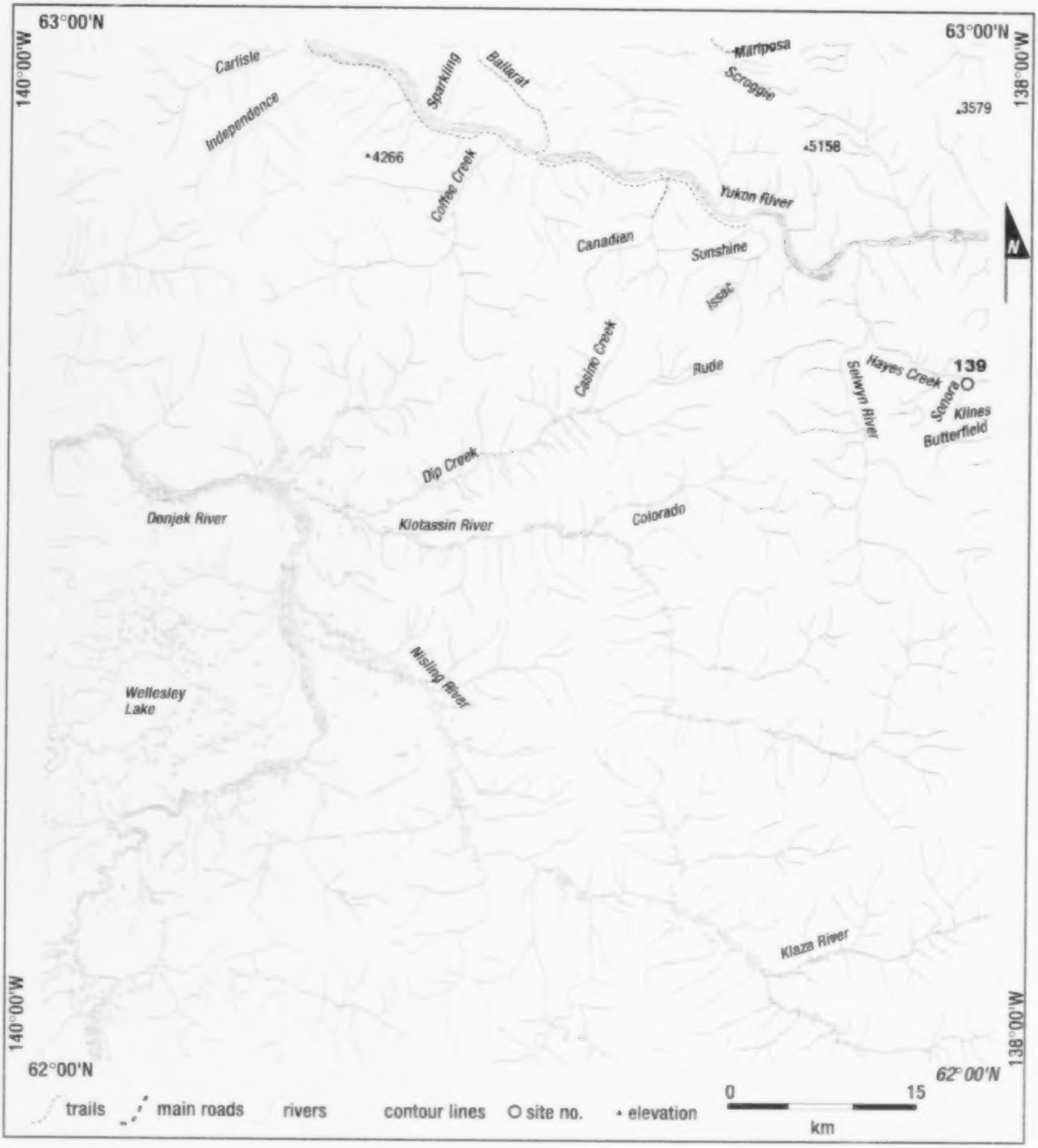
Wash Plant A hopper was used to feed an approximately 4-foot trommel with a stacker. This was a floating unit.

Water Supply and Treatment A gravity feed ditch was used to divert water to a small out-of-stream reservoir. A pump was used to supply water to the processing plant. The effluent flowed down, at times, a very long drain to a series of settling ponds located at the downstream end of the property, then discharged back to Canadian Creek.

Britiannica Pacific Mining Ltd. on Canadian Creek.

SELWYN
PLACER AREA

SITE 139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63°00'N
138°00'W
Carlisle
Independence
Sparkling
Ballarat
Mariposa
Scroggie
.3579
.5158
.4266
Coffee Creek
Yukon River
N
Canadian
Sunshine
Issac
Casino Creek
Rude
Hayes Creek
Selwyn River
139
Sonora
Klines
Butterfield
Dip Creek
Donjek River
Klotassin River
Colorado
Nisling River
Wellesley Lake
Klaza River
140°00'W
62°00'N
138°00'W
62°00'N
trails
main roads
rivers
contour lines
○ site no.
▴ elevation
0
15
km

LEGEND

139..... George Wilson, Sonora Gulch

SONORA GULCH 115J/9

George Wilson	62°38'N 138°01'W
Water Licence: PM99-116	2000, 2001, 2002
Selwyn Placer Area	**Site no. 139**

OPERATION/LOCATION George Wilson worked this site in the 2000 season on his own. The left limit of Sonora Gulch in the V valley was being stripped, with the settling facilities located on the lower reach alluvial fan.

EQUIPMENT/FUNCTION A bulldozer was used to strip overburden and stockpile pay materials, with an excavator feeding the processing plant.

WATER SUPPLY AND TREATMENT There is one settling pond at the mouth of the V valley. Water was taken by pump from Sonora Gulch. A discharge from the settling pond has not been observed.

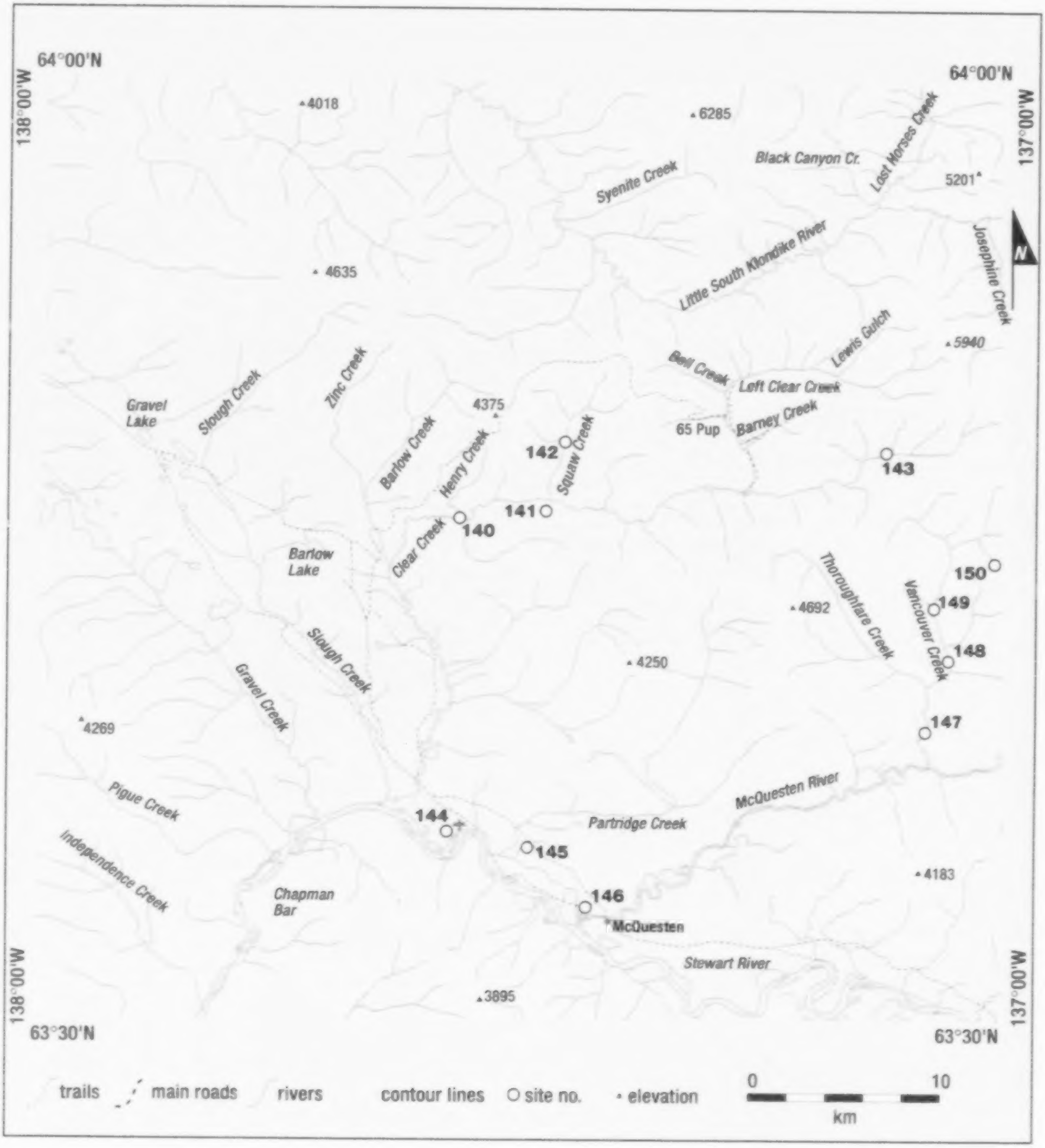
COMMENTS The majority of work at this site has been in ground preparation for mining, moving materials, camp and equipment on-site. This is an extremely isolated site accessible by winter road or by air only. Mr. Wilson made a considerable effort to clean this site up from the garbage and materials left by previous miners.

George Wilson's operation on Sonora Gulch.

SOUTH McQUESTEN

PLACER AREA

SITES 140-150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138°00'W
64°00'N
137°00'W
4018
6285
Syenite Creek
Black Canyon Cr.
Lost Horses Creek
5201
Josephine Creek
N
4635
Little South Klondike River
Lewis Gulch
5940
Bell Creek
Left Clear Creek
Barney Creek
65 Pup
Gravel Lake
Slough Creek
Zinc Creek
4375
Barlow Creek
Henry Creek
Squaw Creek
142
143
141
140
Clear Creek
Barlow Lake
Thoroughfare Creek
150
149
Vancouver Creek
148
4692
4250
Slough Creek
Gravel Creek
4269
147
McQuesten River
Pigue Creek
144
Partridge Creek
145
Independence Creek
Chapman Bar
146
McQuesten
4183
Stewart River
3895
138°00'W
63°30'N
137°00'W
63°30'N
trails
main roads
rivers
contour lines
○ site no.
• elevation
0
10
km

LEGEND

140..... Bill Wasylenko, Clear Creek
141..... Hollis Mining, Clear Creek
142..... J. & J. Scott, Squaw Creek
143..... Prospecta Mining, Clear Creek
144 ..... Robert Stirling, Stewart River
145..... Del Buerge, Partridge Creek
146..... Keith Dye, Stewart River
147..... D. Connelly, Vancouver Creek
148..... Vince Young, Vancouver Creek
149..... Ken Pratt, Vancouver Creek
150..... John Wheelton, Vancouver Creek

CLEAR CREEK 115P/13

William Wasylenko	63°46'N 137°34'W
Water Licence: PM95-082	1998, 1999, 2000, 2001, 2002
South McQuesten Placer Area	**Site no. 140**

OPERATION/LOCATION In 1998, Grew Creek Ventures Ltd., Wilf's Contracting and Bill Wasylenko all operated at this location on Clear Creek, just upstream from its confluence with Barlow Creek. The joint venture set up two separate wash plants and mined four cuts. In 1999, Grew Ventures moved on and only three cuts were made. In 2000, 2001 and 2002, this operation was reduced to one-person, mining intermittently throughout the season, due to rising fuel costs.

EQUIPMENT/FUNCTION A Caterpillar D9 bulldozer, Hyundai 38-ton excavator, two Caterpillar (950 + 980) front-end loaders and a 690 John Deere excavator worked the property in various capacities over the past five years.

WASH PLANT During 1998, a shaker plant was employed as well as the Super Sluice 6, using a line bottom single run sluice and averaging about 80 cubic yards per day for one 12-hour shift. The pump was a 6-inch high pressure electric pump capable of 900 igpm and powered by a 6-cylinder Isuzu diesel engine. Only the Super Sluice 6 and a Merideth box (similar to the Ross box) was used from 1999 to 2002, with runs measuring 30 by 16 and 30 by 8. Mr. Wasylenko also switched to a Home 10-inch by 6-inch pump powered by a Ford Diesel engine capable of 90 igpm. The operator processed approximately 60 to 70 cubic yards per hour. Final cleanups were performed with a reverse spiral drum.

GROUND DESCRIPTION The ground encountered from 1998 to 2000 was composed of 4 to 8 feet of sandy topsoil, 20 feet of gravels with bedrock, mixed with yellow clays, ridging across the valley. In 2001 and 2002, the operator moved to the left limit and began to run into overburden from 10 to 15 feet deep overlaying 8 to 10 feet of gravels. The pit mined in 2002 had frozen overburden running in waves.

MINING CUTS In 1998, four mining cuts were excavated, averaging 150 by 250 feet, with one large cut at 500 by 350 feet out of which approximately 35,000 cubic yards were sluiced. Three cuts were made in 1999 averaging 200 by 300 feet. In 2000, activities were considerably reduced and only two pits were excavated measuring 100 by 150 and 100 by 50 feet respectively. An extremely wet season with high water hampered activities. In 2001, Mr. Wasylenko tried to follow a pay streak in the left limit bench. As a result, an area of 200 by 100 by 15 feet was stripped to promote thawing of ground and a 300- by 150- by 20-foot pit was trenched. Equipment was reduced to a D8 Caterpillar bulldozer and the 690 John Deere. The waste section averaged 10 to 14 feet. The bottom 8 feet were sluiced. In 2002, the cut was 125 feet by 300 feet, and the sluice section averaged 6 feet of gravels and 2 feet of bedrock.

WATER SUPPLY AND TREATMENT This operation is entirely out-of-stream, with a drain connecting to a series of settling ponds from old mining cuts before discharging into Clear Creek proper. Water is collected in an upstream reservoir with no recycling.

GOLD Gold is extremely fine-grained, flat in shape and bright in colour, with a finess of 820-840.

COMMENTS Reclamation and restoration is being completed as mining progresses. Tailings upstream of camp have now been contoured and re-sloped. Strippings from the last two pits on the left limit were spread over old mining areas, reclaiming an area 600 feet long and 100 feet wide of old washed tailings. The remainder of the overbuden has been safely stockpiled for restoration at the completion of mining the current pit.

CLEAR CREEK 115P/14

Hollis Mining & Exploration	63°46'N 137°27'W
Water Licence: PM96-034	1998, 1999, 2000, 2001, 2002
South McQuesten Placer Area	**Site no. 141**

OPERATION/LOCATION This was a one-person operation running one five-hour shift per day which increased to a 14-hour shift in 2001. It was located on Clear Creek upstream from the mouth of Squaw Creek. In 1997, Adrian Hollis did some test pits in old tailings as well as the virgin ground on the left limit. In May and June of 1998, the left limit was stripped and overburden stockpiled. The wash plant was put into production by July 1998 and the entire operation was completed by the end of 2001.

EQUIPMENT/FUNCTION A Komatsu PC400 was the only excavator used at this site.

WASH PLANT The sluice set up was composed of an 8- by 10-inch hopper and 10-inch grizzly to help deal with the large boulders in this area. A 5- by 11-foot screen deck reduced material to 7/16 which was sent through two 8-foot wide sluice runs with hydraulic riffles. A 5-inch Cornell pump was used powered by a Caterpillar 3208 diesel engine capable of 1000 igpm. The processing rate was 150 cubic yards per hour and Mr. Hollis sluiced five to six hours daily.

GROUND DESCRIPTION Overburden was frozen black muck and previous gravel tailings which had been pushed up on the left limit. At 35 feet, the first bedrock was encountered and tended to be wavy, varying from completely decomposed to fractured. The sluice section in this ground was 2 feet of decomposed bedrock and anywhere from 8 to 10 feet of fractured. In 2001, Mr. Hollis encountered less frozen black muck (20 feet) and was able to mine 3 feet of creek gravels and 2 feet of decomposed bedrock.

MINING CUTS By 2000, the operator had completed mining and sluicing a cut approximately 2400 feet by 60 feet. A final cut was made in 2001 of about 650 feet by 6 feet.

WATER SUPPLY AND TREATMENT Water was acquired from Clear Creek and pumped to a reservoir, well out-of-stream. A series of three tailing ponds which were old mine workings from a previous era ensured that the effluent was well within the required 2.5 ml/l. The operator was unable to recycle due to the porous nature of the gravels and very poor water retention.

GOLD The gold was bright coloured and found in quartz-scheelite formations. The shape of the gold was flat and fine, ranging from +10 to +60 in particle size. A long tom was used for final cleanups.

COMMENTS Mr. Hollis pursued a progressive reclamation program. All tailings were contoured, sloped and covered with the stockpiled overburden to enhance natural revegetation of the mined area. In 2000, his operation was recommended for the Robert E. Leckie Award for reclamation practices above and beyond what was required by mining land use legislation. Mr. Hollis moved all equipment, structures and waste off site and a Certificate of Completion and Cancellation of Water Licence was issued in 2002.

SQUAW CREEK 115P/14

W.J.H. Scott	63°48'N 137°27'W
Water Licence: PM99-112	1998, 1999, 2000, 2001, 2002
South McQuesten Placer Area	**Site no. 142**

OPERATION/LOCATION John and Joyce Scott moved to this location from 65 Pup in 1998 and set up a temporary camp at the headwaters of Squaw Creek, a right limit tributary to Clear Creek. Access to this area is via a road which descends from an old ridge road high above the valley proper. In 2002, they were joined by their son, Gordon Scott.

EQUIPMENT/FUNCTION In 1998 and 1999, a 690 John Deere back hoe with a half yard bucket was used to test the ground. In 2000, they employed a D9G Caterpillar bulldozer with "S" blade and single ripper for stripping and reclamation, a 977H Caterpillar loader for stacking tailings and the John Deere excavator to feed the wash plant and build diversions and ponds. A new 225 Caterpillar back hoe with a ¾-yard bucket was acquired in 2002 for this purpose and the 690 John Deere took over stacking tailings. The Caterpillar 977H excavator was retired to standby duty.

WASH PLANT A 4- by 4-foot shaker plant was used to initially test the gravels, attached to a Gorman Rupp 6- by 6-inch pump powered by a Ford 300 diesel engine and capable of 500 igpm. During the second season, a 3- by 4-foot shaker plant with -½ inch screen deck attached to 4- by 8-foot sluice runs with hydraulic riffles over Nomad matting. Approximately 30 loose yards were processed per hour. The pump was powered by a 1.2 litre Hyundai motor for a short time, but the operation returned to the Ford 300 six cylinder diesel in 2002. Final cleanups were conducted with hydraulic boil boxes and a long tom.

GROUND DESCRIPTION The overburden consisted of 1 to 3 feet of mossy vegetation and silty dirt. Six to 12 feet of washed rock ranging from pea-sized gravels to boulders covered a layer of hard subsoil encrusted with calcium-carbonate typical of semiarid regions. This hardpan was composed of coarse gravels and heavy clays which ranged from 1 to 3 feet. Bedrock was unconsolidated, fractured, red-coloured metamorphic rock. The sluice section was 1 foot of the washed gravels, all of the hardpan and from 2 to 3 feet of the bedrock.

MINING CUTS In 1998, only testing was done. Two cuts were mined in 1999, one 135 by 20 feet and a second cut 90 by 20 feet. The operator sluiced for approximately 53 hours in 2000 from a 270 by 120 cut. In 2001, the operation moved further upstream and a cut 350 by 80 feet was made and the bottom 3 feet sluiced over a period of 106 hours. Due to the elusive nature of the pay streak and the narrowness of the valley, it was decided in 2002 to move back to the beginning and mine the entire valley, building diversion channels for the creek as required. Fifteen sections were completed, each approximately 50 by 100 feet.

WATER SUPPLY AND TREATMENT A series of three settling ponds were constructed out-of-stream on the lower end of Squaw Creek, each approximately 50 by 50 feet. A bedrock drain was constructed on the right limit to accumulate and drain groundwater and seepage. Diversion channels were placed on the left limit. An upstream reservoir was maintained to collect and retain water for sluicing. In 2002, the number of settling ponds was increased to seven to ensure proper containment of effluent due to unpredictable, heavy rainstorms experienced and the additional material being handled.

GOLD The gold is bright with a fineness of 900. Most is -14 mesh in size. Fifty percent of the gold is flat and well worn and 50 percent is not worn or well travelled.

COMMENTS Reclamation at this site is progressive and ongoing. In 2000, 700 feet of mined area was reclaimed moving about 5000 cubic yards of material. Unless required for drains or ponds, the cuts are filled in with the material taken from the next site and overburden is spread back over the contoured tailings. Due to increased activity in 2002 and a change of mining plans, no reclamation was done in 2002.

CLEAR CREEK 115P/14

Prospecta Mining Ltd.	63°47'N 137°14'W
Water Licence: PM99-092	1998, 1999, 2000, 2001, 2002
South McQuesten Placer Area	**Site no. 143**

Operation/Location Dick and Judi Board continued their operation on the Right Fork of Clear Creek just below the Queenstake dredge. There were two miners and two camp personnel running one 12-hour shift daily. The 1997 operation on the right limit tributary was discontinued and mining returned to the main creek. After mining in 1998, they decided to try to sell the property. Only testing, restoration of creek channel and reclamation were done from 1999 to 2002.

Equipment/Function Two 155A Komatsu bulldozers with U-blades and rippers were used for stripping frozen overburden and stockpiling gravels. A Komatsu 450 loader with a 4½-yard bucket was employed to remove tailings and a Bantam C260 backhoe with a ¾ yard digging bucket and a 1½-yard front-end loader dug drains and fed the sluice plant.

Wash Plant A 5-foot in diameter by 40-foot long trommel classified material to ¾ inch minus attached to a single sluice run 42 feet long by 4 feet wide. The sluice run was lined with both angle iron riffles and expanded metal over Nomad matting. Water was obtained with an 8-inch pump, capable of 1200 igpm and processed about 100 cubic yards per hour. A jig with a long tom was used for final cleanup of the gold which was then screened and tabled.

Ground Description An average of 4 feet of overburden and 3 feet of gravel were encountered. Overburden was frozen and uniform in composition. Bedrock was flat, not wavy and unconsolidated.

Mining Cuts Prospecta Mining Ltd. mined six cuts, which averaged in size 150 feet by 250 feet in 1998 only. During the following years, the company tried to sell this operation and spent time organizing and fixing equipment, completing reclamation and restoration work and preparing ground for temporary closure. A few small areas were tested and sluiced. In 2001 and 2002, the majority of fuel tanks and equipment had been hauled out of the valley and only the camp remains.

Water Supply and Treatment Effluent treatment was out-of-stream and the standard was 2.5 ml/l. Pond size was about 200 feet by 300 feet and there was approximately 10% recycle possible.

Gold The gold was mostly flat, although some pieces were angular in shape. Recovery consisted of about 10% at +10, 70% at -10 to +60 and the remaining 10% at -60%. Fineness was consistently around 840.

STEWART RIVER 115P/12

Robert Stirling	63°36'N 137°34'W
Water Licence: PM00-193	1998, 1999, 2000, 2001, 2002
South McQuesten Placer Area	**Site no. 144**

Operation/Location Minor exploration activities occurred on the claims since the 1994 and 1996 mining seasons when the major mine development occurred.

Equipment/Function A Kubota KH-41 excavator was used to access pay gravels, while hand testing was done to prove pay values. In 1996, an orbital spinning box had been used to recover thin bar gold. Since 1996, the property has seen minor exploration activities for several weeks a year within the confines of the 1994 to 1996 mining disturbance.

Ground Description Mining was on bar deposits on an overgrown back channel of the Stewart River. Values are reportedly very fine in shallow layers.

Water Supply and Treatment Ground water from the mining cut is used for sluicing and is re-circulated through the mine cut.

Gold Reported as thin bar gold which would fit through a 1 mm screen.

PARTRIDGE CREEK 115P/12

Del Buerge	63°35'N 137°28'W
Schedule III	1998, 1999, 2000, 2001, 2002
South McQuesten Placer Area	**Site no. 145**

Operation/Location Del Buerge continues to mine this dry bench on an unnamed right limit tributary of Partridge Creek in his spare time from the Partridge Creek Farm, a business in the same area. Mr. Buerge and, on occasion, other members of the family, usually find time in mid- to late August for this venture.

Equipment/Function A Construction King 580B backhoe and loader is used for stripping ground, loading and feeding the wash plant, as well as removal of tailings.

Wash Plant The wash plant is a unique, lightweight home-built aluminum trommel which is easily moved from site to site. Its dimensions are 15 inches wide by 4 feet long and it is attached to a 10-foot by 42 inch dump box. The punch plate is ½ to 1½ millimetres in size. Added to this is a 3-foot sluice run which contains 2-inch expanded metal over a wool blanket. A small 2-inch Honda pump, powered by a 5-horsepower gas engine is capable of 40 igpm, processing an average of 6 cubic yards per hour.

Ground Description The ground is composed of old bar and channels of the Stewart River which are readily visible in aerial photographs. Values are contained in the top 3 feet of gravel which are thawed, almost immediately beneath the surface overburden.

MINING CUTS An area approximately 300 feet by 200 feet has been excavated and processed over the years. Only six days were spent at the site in 2002, finishing sluicing of the stockpiled materials and cleanup.

WATER SUPPLY AND TREATMENT All activity is out-of-stream. This tributary basically flows beneath the ground and water acquisition is from Partridge Creek proper.

GOLD Ninety percent of the gold recovered is -60 or finer with a fineness of 845.

COMMENTS Reclamation is progressive at this site.

McQUESTEN RIVER 115P/11

Keith Dye	63°33'N 137°25'W
Water Licence: PM94-104	1998, 1999, 2000
South McQuesten Placer Area	**Site no. 146**

OPERATION/LOCATION This was a small-scale exploratory program to prove placer gold values on the McQuesten River near the confluence with the Stewart River. Test pits with stripping and pit excavations washed materials through a trommel wash plant. No mining activity took place in the last years of the licence due to the lack of an access agreement with the local First Nation.

VANCOUVER CREEK 115P/11

Don Connelly	63°38'N 137°07'W
Water Licence: PM97-005	1998, 1999, 2000, 2001, 2002
South McQuesten Placer Area	**Site no. 147**

OPERATION/LOCATION Don Connelly has operated a family mine since 1998 on the lower reaches of Vancouver Creek. In 1998, an exploratory season began with the construction of a two-stage settling facility and drain, which was completed by winter. The following years were spent progressively mining upstream from the original testing area.

EQUIPMENT/FUNCTION A Caterpillar 235 excavator was used for processing pay gravels and a Caterpillar D-8 bulldozer was used for stripping and placement of waste.

WASH PLANT A vibrating screen deck with a single sluice run measuring 32 feet long by 4 feet wide has been used for the four years of mining.

GROUND DESCRIPTION The ground varies throughout the length of Vancouver Creek, but in general, the top 2 feet of the stratigraphic profile is organic, followed by 4 feet of sands and fine gravels. These layers are stripped and stockpiled. Under the sand is another 5 feet of coarse gravels and boulders underlain by 4 feet of a clay and gravel conglomerate which constitutes the pay gravels for this operator. Beneath the clay layer was an additional 12 feet of material before bedrock was reached which proved unsatisfactory to mine.

MINING CUTS Test pits and construction of the drain and the two-stage settling ponds were the only work done during 1998. The 1999 mining season saw a single cut mined 60 feet wide by 200 feet long by 27 feet deep. This was the only year which the mining cut was to bedrock. The 2000 season had a single mining cut 50 feet wide by 100 feet long reaching to the clay layer in depth for an estimated 12,300 cubic yards of material processing. No mining activity was done beyond testing and exploratory work during the 2001 and 2002 seasons.

WATER SUPPLY AND TREATMENT Vancouver Creek supplied the wash plant as required, which fed through the drain created by previous mining cuts to the settling ponds located out-of-stream at the lowest point of mining work by Don Connelly.

GOLD Gold values were reported to be 50% ¼ minus and the remaining gold was 16 mesh or finer using a Tyler sieve. Gold values recovered were low and no fineness rating was available.

VANCOUVER CREEK 115P/14

Vince Young	63°45'N 137°03'W
Water Licence: PM00-177	2000, 2001, 2002
South McQuesten Placer Area	**Site no. 148**

OPERATION/LOCATION Exploratory testing of the ground by Vince Young and different partners has occurred sporadically since 2001. No mining occurred in 2000 or 2002 and three different partners in 2001 have resulted in tested ground with reported 150-200 colours per pan in fine flour values.

EQUIPMENT/FUNCTION A Caterpillar D-8H and a Caterpillar 235 excavator with a UH-107 Hitachi excavator was the equipment utilized in the testing programs.

WASH PLANT A 20-foot by 36-inch wide long tom with riffles on a 2¼ inch spacing over expanded metal with synthetic matting underneath.

GROUND DESCRIPTION Pay gravels were found to be located above a false bedrock of blue clay and were 8 feet to 12 feet thick. All gravels below the top 2 feet were washed as pay gravels to the clay layer. All testing of the materials below the clay layer proved that boulders and glacial till were to be found to bedrock below the clay but no values were located below the false bedrock layer.

MINING CUTS Test cuts throughout the mining claims on Vancouver Creek have been the only activity to date.

Don Connelly's operation on Vancouver Creek.

WATER SUPPLY AND TREATMENT Ground water has been utilized from the mine cut and the effluent has been returned to the mine cut for full re-circulation and settling. An Armstrong 3½ inch by 4 inch diesel water pump supplied the wash plant.

GOLD All reported gold values were flour gold with values of 150-200 colours per pan being tested from the mine cuts.

VANCOUVER CREEK	115P/14
Ken Pratt	63°44'N 137°05'W
Water Licence: PM99-111	2000, 2001, 2002
South McQuesten Placer Area	**Site no. 149**

OPERATION/LOCATION This is an exploratory mining operation on the upper reaches of Vancouver Creek. Access difficulties have limited mining activities.

EQUIPMENT/FUNCTION Travel trailers have served as the seasonal camp quarters. An Hitachi 077 excavator was used for material handling to a wash plant with 3-foot by 8-foot double screen decks and an oscillating sluice box 15 feet by 4 feet in size. Waste material was disposed of by a 50-foot conveyor assembly.

GROUND DESCRIPTION Minimal ground soils have been encountered throughout the mining. A false bedrock of blue clay has been reported in this mining operation with 6 feet of boulders and 2 feet of gravels reaching to a marginal topsoil layer at the surface. The blue clay layer was located 2 to 3 feet above the bedrock. Pay values were found only in the vicinity of the clay layer.

MINING CUTS Access and property exploration was done in 2000 and 2001, with a section 250 feet by 100 feet by 15 feet deep stripped, which was mined by the 2002 season. This mining activity was done on the lower BJ claims.

WATER SUPPLY AND TREATMENT Water was supplied by a Honda 4-inch sludge pump from the re-circulated groundwater in the mine cut and the operation had no stream discharge.

GOLD Gold values from the tested property were reported as granular fines. Quantities recovered were limited and no grade for the gold had been determined.

VANCOUVER CREEK	115P/14
John Wheelton	634°5'N 137°00'W
Water Licence: PM99-088	1999, 2000, 2001
South McQuesten Placer Area	**Site no. 150**

OPERATION/LOCATION This was an exploratory mining development and assessment program on the upper reaches of Vancouver Creek. Access difficulties limited the mining program and by 2001 the test program had not proven the ground and the licence was closed.

EQUIPMENT/FUNCTION The new access was constructed with a D-8 Caterpillar bulldozer and the test trenches were stripped

John Wheelton's operation on Vancouver Creek.

with the same equipment. Hand-testing pay gravels in the trenches was done to ascertain values and a drilling program with a 5-inch auger drill was done to supplement local knowledge for development of a mining program.

GROUND DESCRIPTION Near the valley walls, bedrock was found to be 8 to 12 feet deep and deepening to 30 to 40 feet in the valley center. Reworked glacial till materials were reported throughout the tested areas below 2 feet of topsoil.

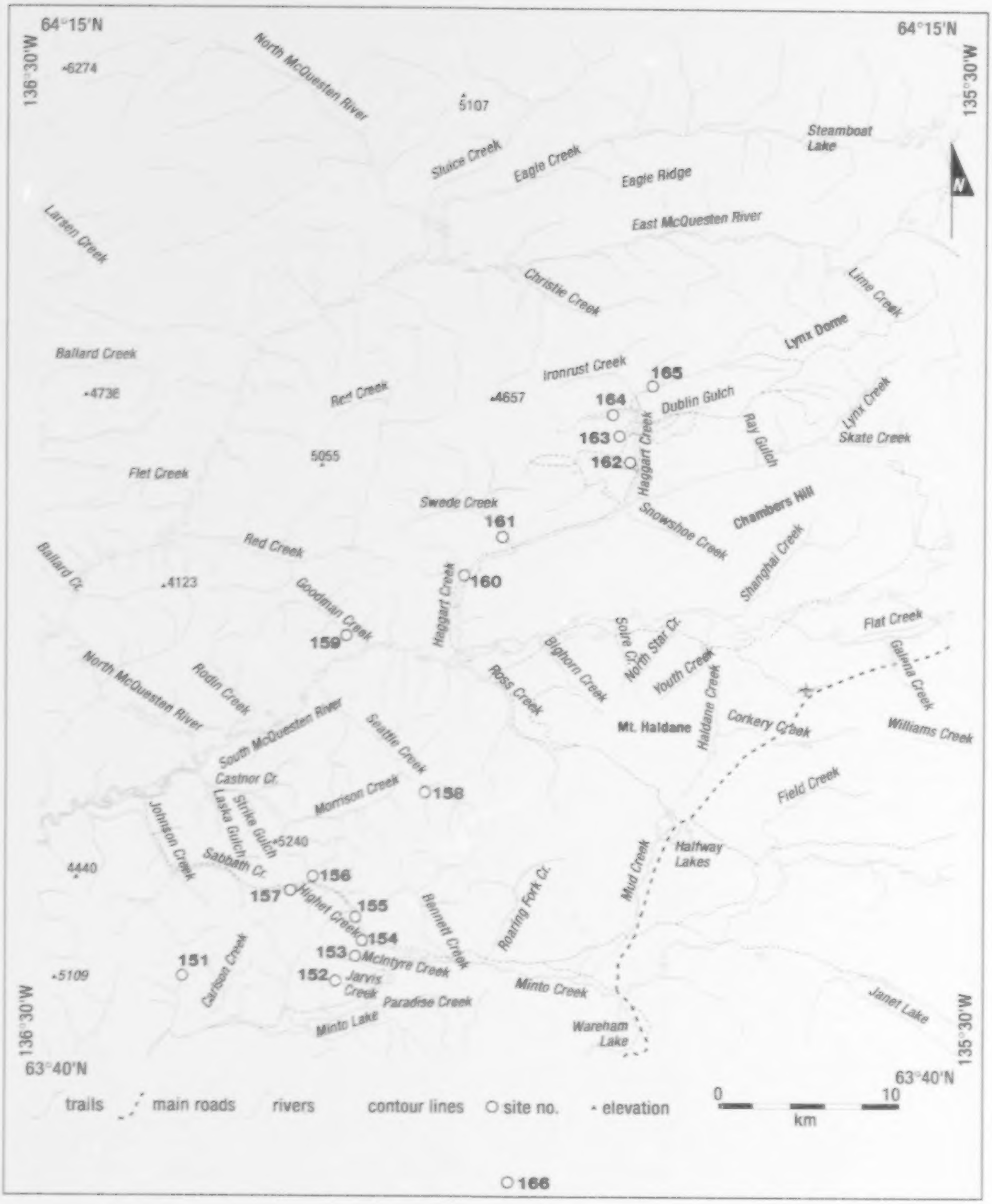
MINING CUTS Mining activities consisted of a series of trenches to systematically prove the value of the property. Three trenchs were dug along the left limit of the drainage with two of these areas being stripped for potential mining. The two stripped areas were 300 feet by 200 feet and 100 feet by 200 feet and the bulldozer was used to sample from within these cuts.

WATER SUPPLY AND TREATMENT Ground water was used for the hand testing in the trenches.

GOLD No economic pay values were found in the testing program and all values recovered were described as flour. No gold grade was available for the limited values recovered.

MAYO PLACER AREA

SITES 151-166


64°15'N
136°30'W
64°15'N
135°30'W
6274
North McQuesten River
5107
Sluice Creek
Eagle Creek
Eagle Ridge
Steamboat Lake
N
East McQuesten River
Larsen Creek
Christie Creek
Lime Creek
Lynx Dome
Ballard Creek
Ironrust Creek
165
4738
Red Creek
4657
164
Dublin Gulch
163
Haggart Creek
Ray Gulch
Lynx Creek
Skate Creek
162
5055
Flat Creek
Swede Creek
Chambers Hill
161
Snowshoe Creek
Red Creek
Shanghai Creek
Ballard Cr.
4123
160
Goodman Creek
Haggart Creek
Soire Cr.
North Star Cr.
Flat Creek
159
Bighorn Creek
Youth Creek
Galena Creek
North McQuesten River
Rodin Creek
Ross Creek
Haldane Creek
South McQuesten River
Seattle Creek
Mt. Haldane
Corkery Creek
Williams Creek
Castnor Cr.
Morrison Creek
158
Field Creek
Johnson Creek
Laska Gulch
Strike Gulch
5240
Halfway Lakes
4440
Sabbath Cr.
156
Mud Creek
157
Highet Creek
155
Bennett Creek
Roaring Fork Cr.
154
153
McIntyre Creek
151
Carlson Creek
5109
152
Jarvis Creek
Paradise Creek
Minto Creek
Janet Lake
Minto Lake
Wareham Lake
136°30'W
135°30'W
63°40'N
63°40'N
trails
main roads
rivers
contour lines
site no.
elevation
0
10
km
166

LEGEND

151..... Peter Tyerman, VanBibber Creek
152..... Roy Mueller, Jarvis Creek
153..... Bill Jardine, Minto Creek
154..... Wilfs Contracting, Highet Creek
155..... Sasha Mining, Highet Creek
156..... Jean Gordon, Highet Creek
157..... Frank Erl, Highet Creek
158..... Dan Klippert, Seattle Creek
159..... Kim Klippert, Goodman Creek
160..... Harry Johnson, Haggart Creek
161..... Frank Plut, Swede Creek
162..... Dublin Gulch Min., Haggart Creek
163..... Ted Takacs, Haggart Creek
164..... Rody Ramey, Haggart Creek
165..... Victoria Placers, Haggart Creek
166..... Empire Creek Mining Ltd., Empire Creek

VAN BIBBER CREEK 115P/9

Peter and Grace Tyerman	63°39'N 136°22'W
Water Licence: PM00-194	1998, 1999, 2000, 2001, 2002
Mayo Placer Area	**Site no. 151**

OPERATION/LOCATION No mining occurred during 1998 and 1999. Prospecting and assessment work was completed for development of future mining plans. Mining activities renewed in 2000 with the mine cut being moved upstream of prior workings by one mile. Two miners worked a 12-hour shift each day in 2000 and 2001. This was downsized to a one-person operation in 2002.

EQUIPMENT/FUNCTION A Komatsu D-65A and a D-60A bulldozer were used for stripping. A D-65S Komatsu loader was used for removal of tailings while a JSW PH-70 excavator fed the wash plant.

WASH PLANT A 20-foot long by 8-foot wide dump box and a wet grizzly fed material to a 2-foot wide by 24-foot long sluice run. An estimated 60 cubic yards of pay was processed per hour. In 2000, the grizzly was rebuilt bringing the processing rate to 100 cubic yards per hour.

GROUND DESCRIPTION It was 14 feet to bedrock with pay gravels 5 feet above bedrock. Noticeably fewer large rocks were found within mine cuts in 2000 and 2001. The depth to bedrock in 2002 varied from 12 feet to 20 feet with the same pay gravels being found next to bedrock.

MINING CUTS In 2000, two cuts were completed, each 60 feet wide by 400 feet long and averaging 14 feet to bedrock. In 2001 only one cut was completed — 60 feet wide by 500 feet long and continuing the average depth to bedrock of 14 feet. The full 14 feet were sluiced. The 2002 season saw three mining cuts being developed sequentially upstream, averaging 200 feet by 100 feet wide.

WATER SUPPLY AND TREATMENT Water was acquired from Van Bibber Creek and fed through a wash plant where the effluent was treated through a series of small in-stream settling ponds.

GOLD Fifty percent of the recovered gold was coarse. Fineness was reported as 840.

COMMENTS This licence is a continuation of PM95-075.

JARVIS CREEK 115P/16

Roy Mueller	63°42'N 136°08'W
Water Licence: PM98-033	1998, 1999, 2000, 2001, 2002
Mayo Placer Area	**Site no. 152**

OPERATION/LOCATION This is a one-person operation that hasn't started production. The camp and equipment working area have been established on a bench overlooking Jarvis Creek. Assessment work was the only activity until 2002. Late in the 2002 season, contract stripping with a Caterpillar D-7 was completed for an estimated 55,000 cubic yards of material handled for ground preparation.

MINTO CREEK 115P/9

William J. Jardine	63°42'N 136°08'W
Water Licence: PM97-038	2000, 2001, 2002
Mayo Placer Area	**Site no. 153**

OPERATION/LOCATION This is a one-person placer operation working bench deposits overlooking Minto Lake.

EQUIPMENT/FUNCTION A P&H excavator with a ¾ cubic yard bucket was used for all material processing with a D-8 bulldozer being contracted for stripping and reclamation work.

WASH PLANT A 4-foot by 10-foot vibrating screen deck classified materials for the sluice run with slick plates and hydraulic riffles.

GROUND DESCRIPTION The ground worked has never reached bedrock and consists of glacial gravels, boulder groupings, clay layers throughout and heavily mineralized belts thought to be associated with possible faults and glacial end deposits from Highet Creek. Eight feet of overburden was stockpiled by bulldozer and the remaining gravels were processed through the wash plant.

MINING CUTS During 2000, a small recycling pond was constructed and small-scale exploration activities were conducted throughout the summer. The 2001 mining season saw the development of a single cut, 100 feet long by 60 feet wide which averaged 20 feet in depth. Two mining cuts were mined in 2002; the first was 40 feet long by 30 feet wide and the second was 100 feet long by 90 feet wide, with both cuts being mined to 18 feet.

WATER SUPPLY AND TREATMENT Spring runoff is captured and is complemented in the mining season by a surface spring located uphill from the mining operation which is utilized as make-up water from evaporative losses for the recycling system. No water discharge occurs during mining and the settling ponds are allowed to de water every fall to ensure site stability. The 2002 season saw a water shortfall later in

Bill Jardine at his operation on Minto Creek.

the season which forced the operator to begin exploration activities on Goodman Creek.

Gold All gold recovered was fine, with two distinct fineness levels noticeable by the brightness differences. Some angular gold was reportedly recovered during the 2002 season.

Comments The 2001 mining season finished proving the ground and defined the glacial gravel deposit which will be mined for the next several seasons. The channel deposit became more defined in 2002 as the work progressed up slope towards the headwaters of Jarvis Creek.

HIGHET CREEK 115P/9

Wilf Tuck	63 °44'N 136°07'W
Water Licence: PM99-023	1998, 1999, 2000, 2001, 2002
Mayo Placer Area	**Site no. 154**

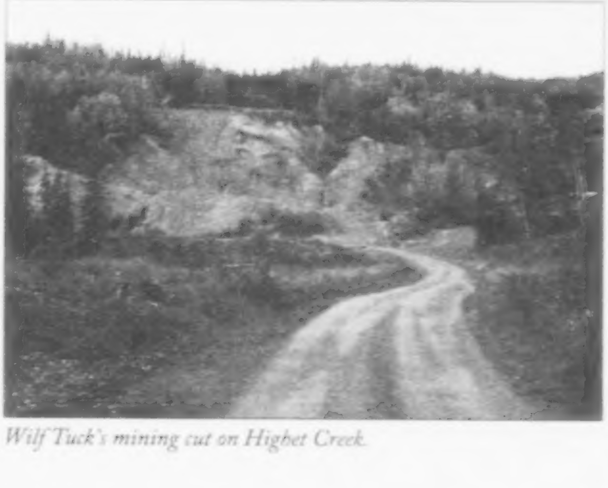
Operation/Location Operation continued from previous licence PM95-074 on the lower end of Highet Creek on a left limit bench.

Equipment/Function A D-8K Caterpillar bulldozer was used for access construction to top of the bench where stripping was done for ground preparation in 1999.

Wash Plant There is no wash plant on-site.

Ground Description Approximately 80 feet of silt, some of it frozen, overlay 16 to 18 feet of pay gravels. Very little rock was encountered. Two old drifts remain exposed in the bottom of the cut.

Water Supply and Treatment No water used from 1998 to 2002. A large, deep single cell settling facility has



Wilf Tuck's mining cut on Highet Creek.

been constructed below the mining cut for future mining activities.

Gold Fine gold has been recovered in past mining. Fineness was 800.

Comments During 1998, a trailer camp was brought on-site. Ten days of stripping was done in 1999 for ground preparation but no testing or sluicing occurred. Four days of stripping was done in 2002 with an estimated 3,000 cubic yards being handled.

HIGHET CREEK 115P/9

Sasha Mining Ltd	63°43'N 136°08'W
Water Licence: PM95-108	1998, 1999, 2000, 2001
Mayo Placer Area	**Site no. 155**

Operation/Location Merrill Powers and his family continued their mining on Highet Creek under an option from Lowell Bleiler. In 1998, the mining occurred below the canyon on a right limit bench above the large settling ponds. Two 12-hour shifts were worked by a crew of five. During 1999, Merrill Powers attempted to mine the canyon on Highet Creek. A small right limit cut above camp was mined at the end of the season.

Equipment/Function In 1998, a D-9 Caterpillar bulldozer was used for stripping and pushing up pay. A UH-20 and a UH-30 Hitachi excavator were used for feeding the wash plant and stripping, while a 988B Caterpillar loader removed the tailings. In 1999, two 769C Caterpillar rock trucks were used in the canyon mining cut.

Wash Plant A wet hopper 8 feet by 8 feet by 4 feet in dimension fed material to a 9-foot diameter trommel with ¾-inch screens. The 8-foot wide by 9-foot long top run of a reversing sluice box was lined with hydraulic riffles over astroturf. The bottom run was 8 feet wide by 24 feet long and was lined with expanded metal over astroturf. The processing rate was 150 cubic yards per hour.

Ground Description The right limit bench worked in 1998 consisted of coarse gravels overlaid by sand, with the sand becoming thicker and more pronounced the deeper into the hillside the mining cut worked. The deposit was washed from the top down until the gravels became finer, which ranged from 15 feet to 60 feet. The Highet Creek canyon mine cut, which was worked in 1999, managed to reach bedrock through fine sands, gravels and black muck totalling 60 feet, with the last 10 feet or less above bedrock being the pay gravels. The right limit mine cut above camp in 1999 had 45 feet of overburden with 6 to 8 feet of pay gravels.

Mining Cuts In 1998, a single cut measuring 200 feet by 500 feet was mined on the right limit bench below the Highet Creek canyon. During 1999, two separate areas were mined; the canyon mine cut was attempted and measured 100 feet wide by 500 feet long by 70 feet deep, while another mine cut was developed above camp on the right limit of Highet Creek measuring 75 feet wide by 500 feet long by 50 feet deep.

Water Supply and Treatment Water was supplied to the wash plant at a rate of 1500 igpm by an 8 by 10 inch Cornell pump powered by a 671 Detroit diesel engine. Effluent was discharged back into the creek and was settled in an out-of-stream settling pond downstream of the canyon.

Gold Gold was generally fine and flat; 80% was smaller than minus 60 mesh. Fineness was 840.

RUDOLPH GULCH 116P/16

Jean Gordon	63°46'N 136°13'W
Water Licence: PM95-048	1998, 1999
Mayo Placer Area	**Site no. 156**

Operation/Location This water licence was mined by several different operators. Howard Lone ran his one-person operation on Rudolph Gulch, working under Jean Gordon's water licence. The first three claims from the mouth of Rudolph were worked extensively, with sporadic exploration attempts upstream. During the 1999 season, the right limit of Highet Creek across from the mouth of Rudolph was mined.

1998 was the final season of four years of mining by Con and Kim Klippert on the lower three claims on Highet Creek held under this licence.

In memory of Con Klippert.

EQUIPMENT/FUNCTION A D-8 Caterpillar bulldozer stripped the overburden and a Trojan 3000 loader stockpiled pay gravels while a 977 Caterpillar track loader processed pay gravels through the wash plant. A 6-inch diesel water pump supplied the wash plant.

Two D-8H Caterpillar bulldozers, two Michigan 275B loaders, a UH-12 and a UH-16 Hitachi excavators were used for material processing.

WASH PLANT Material was fed into a 10- by 12-foot dump box with spray bars. A grizzly classified material to 1½ inch minus, which was then fed into a 3-foot wide by 16-foot long sluice run with 2-inch riffles over expanded metal and cocoa matting. During 1999, another wash plant was used with a tapered hopper 12 feet wide by 8 feet long which provided material to a 5-foot by 7-foot shaker table. Punch plate on the shaker screened material to ½ inch and was fed to an 8-foot wide by 16-foot long sluice run. Hydraulic riffles lined the top 6 feet and expanded metal lined the lower 10 feet over top of Nomad matting.

There was a 5 by 12 screening plant with two 8- by 10-foot long sluice runs lined with unbacked Nomad matting. The oversized materials were disposed of with the aid of a 40-foot conveyor assembly. One hundred to 150 cubic yards was estimated as the processing rate.

GROUND DESCRIPTION The total depth to bedrock averaged 20 feet but exceeded 50 feet in the 1998 mining cut, consisting of 12 feet of gravels which were all washed as pay gravels. The waste section was sand and clay with oversized boulders throughout.

The lower three claims worked on Highet Creek by the Klipperts ending just downstream of the mouth of Rudolph Creek were overlain by 6 to 20 feet of old timers' tailings. Below the tailings, coarse gravels with a mixture of large boulders and well rounded cobbles were found in unmined ground.

MINING CUTS A single mining cut was completed in 1998 totalling 17,000 cubic metres on Rudolph Gulch. In 1999, the single mining cut totalled 3500 cubic metres on the right limit of Highet Creek across from the mouth of Rudolph Creek.

Con and Kim Klippert were able to mine approximately one claim per year with three mine cuts, each totalling 100 by 150 feet.

WATER SUPPLY AND TREATMENT A 6-inch water pump powered by a 371 Detroit diesel provided water from both Rudolph Gulch and Highet Creek. Waste water drained through a series of small settling ponds immediately downstream of the mining cut.

A Detroit 10 x 8 diesel water pump provided water to the wah plant which was then funnelled out-of-stream to two settling ponds measuring 200 by 200 and 100 by 175.

GOLD Gold values were averaging less than 12 mesh with a fineness of 830.

HIGHET CREEK 115P/16

Frank Erl	63°46'N 136°12'W
Water Licence: PM96-038	1998, 1999, 2000, 2001, 2002
Mayo Placer Area	**Site no. 157**

OPERATION/LOCATION Frank Erl continued his one-person mining operation on claims above the mouth of Rudolph Pup. Mining occurred in successive cuts following the creek channel upstream. Water was provided by gravity pipeline to the wash plant, with three in-stream settling ponds lower on the claims.

EQUIPMENT/FUNCTION A 950 Caterpillar loader with a 1½ yard bucket fed the sluice box and removed tailings while a D8H Caterpillar bulldozer was used for stripping and levelling tailings.

WASH PLANT A wet grizzly 4 feet long by 5 feet wide fed 3-inch minus material to a single run sluice box 18 feet long by 2 feet wide. The sluice box was lined with hungarian riffles spaced 1¼ inches apart, expanded metal, and cocoa matting.

GROUND DESCRIPTION The depth to bedrock was 24 feet on the left limit, tapering to 18 feet on the right limit valley wall. The waste section varied from 12 to 18 feet, consisting of slide rock 6 feet thick on the left limit overlying glacial gravels with reported poor returns. Beneath this was 4 to 6 feet of pay gravels which extended the full width of the mining cut.

MINING CUTS One cut was mined each year. In 1998 and 1999, the cuts measured 40 feet by 200 feet long and averaged a depth to bedrock of 8 feet. In 2000, the depth averaged 10 feet and the cut size was increased to 40 feet wide by 250 feet long. The 2001 season saw a pay channel being defined which required a widening of the mining cut to 60 feet, which in turn reduced the mine cut length to 120 feet. A total of 2200 cubic yards was sluiced in 2001. The 2002 season saw further development of the pay gravels with a mining cut 200 feet long by 150 feet wide and as much as 30 feet deep.

WATER SUPPLY AND TREATMENT A PVC and aluminum pipeline, 200 feet long and 6 inches in diameter, supplied water by gravity to spray bars on the wash plant at a rate of 600 igpm. Effluent was treated in a series of in-stream ponds. A small pre-settling pond was utilized and cleaned out regularly.

Frank Erl at Highet Creek.

GOLD The gold was flat, smooth and fine throughout the pay gravels next to bedrock with increasing values as mining progressed upstream. During the 2001 season the richest pay was located in a channel on the right limit with coarse gold values. Fineness was 840.

COMMENTS The current water licence is a renewal of PM93-033.

SEATTLE CREEK AND UNNAMED TRIBUTARY 115P/16

Dan Klippert	63°44'N 136°04'W
Water Licence: PM99-082	1998, 1999, 2000, 2001, 2002
Mayo Placer Area	**Site no. 158**

OPERATION/LOCATION Dan Klippert has continued mining up from the mouth of the unnamed tributary on the left limit of Seattle Creek throughout this period. The previous mining activities downstream at the confluence with Seattle Creek have become the camp and water reservoir from Seattle Creek during low water periods.

EQUIPMENT/FUNCTION Equipment used in mining has remained the same since the last industry report with the exception of the Michigan 275 loader being removed from the operation. Two Caterpillar 992 loaders, a Caterpillar 235 excavator, a D-6 Caterpillar bulldozer and a D8K Caterpillar bulldozer were used for the stripping, handling and processing.

WASH PLANT During 1998, a 10 square-foot grizzly classified to 4 inch minus. A single run sluice box 3 feet wide by 20 feet long was lined with 18 feet of angle iron riffles. A New Zealand trommel with a radial 15° stacker was used from 1999 through 2001. The new wash plant reduced the pay gravels to ¾ minus which was fed to a sluice run 10 feet wide by 12 feet long with hydraulic riffles and specialized rubber matting for fine gold recovery. A 4- by 6-inch diesel-powered water pump has supplied both wash plants used over the five years.

GROUND DESCRIPTION Bedrock depths on the unnamed tributary varied from 35 feet to 40 feet on the right limit to approximately 20 feet in the center of the valley. Ten feet of overburden and stripping were removed and the lowest 10 to 15 feet up from the bedrock was sluiced. The remainder of the materials were described as blue grey clays and gravels with associated boulders.

MINING CUTS A sequential series of alternating mining cuts moving upstream has occurred since 1998. The mining cuts for 1998 and 1999 measured 40 feet by 300 feet, while in each of the 2000, 2001 and 2002 seasons, 30 feet by 400 feet were processed.

WATER SUPPLY AND TREATMENT Limited water volumes are available throughout the season on the unnamed tributary which has required the reservoir on Seattle Creek. Treatment consists of a primary settling area at the confluence with Seattle Creek, measuring 200 feet by 100 feet, with the main out-of-stream settling facility upstream of Morrison Creek measuring 300 feet by 200 feet.

GOLD A mixture of coarse and fine gold was recovered, with a fineness of 820.

GOODMAN CREEK 115P/16

Kim Klippert 63°55'N 136°12'W
Water Licence: PM01-248 1998, 2002
Mayo Placer Area **Site no. 159**

Operation/Location Kim Klippert's mining operation on Goodman Creek was done on two separate areas of the creek. One mining/testing area was approximately one mile upstream from its confluence with the McQuesten River, while the second area of mining occurred at the confluence with a tributary on the left limit approximately 8 miles from the McQuesten River. No mining was done on this water licence in 1998 under PM94-060. The licence expired in 1998 and full licence decommissioning was accomplished in 2001. The mining operation was renewed in 2002 under PM01-248, allowing ground testing and preparation of the left limit above the North McQuesten access road. Gold values found were small and flattened, with the pay gravels diverging from the creek drainage as the mining progressed upstream.

MURPHYS PUP, TRIBUTARY TO HAGGART CREEK 115P/16

Harry Johnson 63°58'N 136°02'W
Water Licence: PM02-269 1998, 1999, 2000, 2001, 2002
Mayo Placer Area **Site no. 160**

Operation/Location A small exploratory mining program processed 150 to 200 cubic yards per day.

Equipment/Function Contracted equipment as available and a 125 Clark loader were used for material handling. A Hymack 580 excavator fed the wash plant.

Wash Plant A 36-inch trommel with 1¼ inch openings fed material to a 2-foot by 8-foot sluice with punch plate and hydraulic riffles.

Mining Cuts Exploratory trenching and test pitting of both stream limits were done.

Water Supply and Treatment Small out-of-stream pits were used for settling in the testing program while the mining effluent was handled in out-of-stream ponds constructed on the right limit.

Gold Fine, flat gold was recovered. The gold values were reported to be 800 to 900 fine.

SWEDE CREEK 115P/16, 105M/13

Frank Plut/Livingstone Placer Ltd. 63°58'N 135°59'W
Water Licence: PM01-250 2000, 2001, 2002
Mayo Placer Area **Site no. 161**

Operation/Location An exploration licence for Swede Creek was tested during 2000 and 2001 by Frank Plut, and then optioned by Livingstone Placer Ltd. for development in the 2002 season. Six people were working at the beginning of 2002 and by the fall only three workers remained.

Equipment/Function A D-8H Caterpillar bulldozer was used during 2000 and 2001 for the assessment work and the continued stripping of permafrost areas. In 2002, Livingstone Placer brought their own equipment on-site. A Terex D800, a Terex 72-61 loader with a 5 yard bucket, a Komatsu 1100 excavator and 2 Terex 33-09 rock trucks were used in material handling and site preparation.

Max Fuerstner, Swede Creek.

Wash Plant A small test plant, 8 feet long by 18 inches wide with hungarian riffles, was used in 2000 and 2001. Livingstone Placer used a wash plant with a derocker which screened the materials to minus 2 inches which fed a 5-foot by 12-foot trommel for further refining the pay gravels. The classified pay gravels were then washed in a 10-foot by 12-foot sluice run divided into four separate runs, each utilizing hydraulic riffles.

Ground Description Exposed mine cuts from earlier mining were processed first with the remaining mining consisting of mining the upper 12 feet of the previously stripped area.

Mining Cuts The stripping was done in 2000 and 2001 in 4-foot lifts as the permafrost melted over an area 1200 feet long by 150 feet wide.

Water Supply and Treatment A 2-inch Keen dredge pump was used for testing and effluent was settled in out-of-stream ponds in 2000 and 2001. An 8-inch and a 5-inch water pump were used in 2002. The existing settling ponds were reinforced and utilized for out-of-stream settling in 2002.

Gold Gold values reported in 2000 and 2001 were largely fines with the largest recovered in the pennyweight size. The gold had a fineness of 750. No information was available on the values recovered in 2002.

HAGGART CREEK 106D/4

Dublin Gulch Mining Ltd 64°02'N 135°51'W
Water Licence: PM96-054 1998, 1999, 2000
Mayo Placer Area **Site no. 162**

Operation/Location This operation on Haggart Creek was run by Ron Holway and his son, Fred. The operation accessed the gold values to the drain depth which was limited by a bedrock exposure near the mouth of 15 Pup. The operation ceased mining in 1999 and then limited its activities to the decommissioning of the licence in 2000.

Equipment/Function A D9 Caterpillar bulldozer and a D10 Caterpillar bulldozer were used to strip overburden and stockpile pay. Two 988B Caterpillar loaders fed the wash plant and another was used for removing tailings.

Wash Plant The wash plant consisted of a wet hopper, a trommel 7 feet in diameter by 40 feet long, and a 30-foot long double run sluice. The processing rate was 120 cubic yards per hour.

Ground Description Bedrock depth remained in the vicinity of 70 to 80 feet. Frozen ground was found throughout the mine cuts.

Dublin Gulch Mining Ltd. on Haggart Creek.

WATER SUPPLY AND TREATMENT A 12 by 12 inch pump, powered by a Caterpillar 3304 engine, was used to supply water from Haggart Creek to the trommel at a rate of 1800 igpm.

GOLD Gold values have been reported at a fineness of 870.

GILL GULCH 106D/4

Ted Takacs	64°01'N 135°52'W
Water Licence: PM95-107	1998, 1999, 2000
Mayo Placer Area	**Site no. 163**

OPERATION/LOCATION Ted Takacs had an industrial mining accident which has kept the operation dormant from 1998 to the expiry of the licence. Minor exploration with a 6-inch Spencer auger drill was done in 1999, with 200 cubic yards being sluiced. During 2000, the equipment/operation was consolidated at the Gill Gulch campsite. No further activity has occurred on this site to date.

EQUIPMENT/FUNCTION A 6-inch Spencer auger drill was used for drilling various parts of the property while a Michigan 175 loader moved the drill and processed the pay gravel samples for the wash plant.

COMMENTS This operation has been consolidated to a central site and final decommissioning requirements are outstanding.

FISHER GULCH 106D/4

Roddy Ramey	63°01'N 135°51'W
Water Licence: PM97-015	1998, 1999, 2000, 2001
Mayo Placer Area	**Site no. 164**

OPERATION/LOCATION Rod Ramey continued exploratory mining of the Fisher Gulch placer claims.

EQUIPMENT/FUNCTION A Caterpillar 225 excavator was used for the testing and drain construction while a D85A Komatsu bulldozer was used for stripping. A Fiat Allis FR20 loader fed the wash plant and a Clark 275L loader removed the tailings.

WASH PLANT A 6-foot by 5-foot grizzly classified material to 1 inch minus. This material was fed to a 2-foot by 16-foot single run sluice. The wash plant processed 40 to 60 cubic yards per hour.

GROUND DESCRIPTION The operator is currently reworking property in an attempt to locate the pay channel. The depth to bedrock in places was 40 feet.

MINING CUTS A series of test areas were worked.

GOLD The fineness of recovered gold was 900.

Fisher Gulch looking downstream towards Haggart Creek. Rod Ramey's operation can be seen in the centre ofthe photo.

HAGGART CREEK 106D/4

Victoria Placers Ltd	64°01'N 135°50'W
Water Licence: PM94-036	1998, 1999
Mayo Placer Area	**Site no. 165**

Operation/Location This is an exploratory mining venture by Keith Dye and Orest Curniski on the upper end of Haggart Creek. The two-mile prospecting lease was staked into placer claims in order that a proper assessment program could be completed.

Mining Cuts Sporadic test pits and reworked trenches were the only mining activity on this licence.

EMPIRE CREEK 105M/5

Empire Creek Mining Ltd	63°27'N 135°36'W
Water Licence: PM00-213	2002
Mayo Placer Area	**Site no. 166**

Operation/Location Dan Sabo mined in 2002 below the confluence of the Empire Creek forks on mining claim P-15362. Two miners worked a single six-hour shift averaging four to five hours of sluicing per day.

Equipment/Function A D-8H Caterpillar bulldozer was used to strip and remove tailings. An H65C Hough loader with a 3-yard bucket fed the sluice box, while an Hitachi UHO-7 excavator with a 1-yard bucket was used for stripping and moving pipe.

Wash Plant An 8-foot by 4-foot wide dump box fed a single sluice run 18 inches wide by 11 feet long. The sluice box was lined with 3 inches of Hungarian riffles at 3-inch spacings over cocoa matting. The grade of the box was 2 inches per foot. The processing rate was estimated at 20 cubic yards per hour.

Ground Description Six feet of large boulders up to 5 feet in diameter were mixed with clay and coarse gravel. Bedrock was schist and shale in various stages of decomposition. Bedrock was deeper than the mining in 1991 and 1992.

Mining Cuts A single mine cut, measuring 250 feet long by 50 feet wide by 20 feet thick, was processed in 2002. All materials handled were sluiced from the surface to bedrock.

Water Supply and Treatment Empire Creek supplied the water for sluicing via a 4-inch trash pump and was used as a conduit for the effluent to reach downstream settling ponds. A single out-of-stream settling pond, sectioned into three, provided full stream settling when sluicing. The full settling pond size is 700 feet by 250 feet.

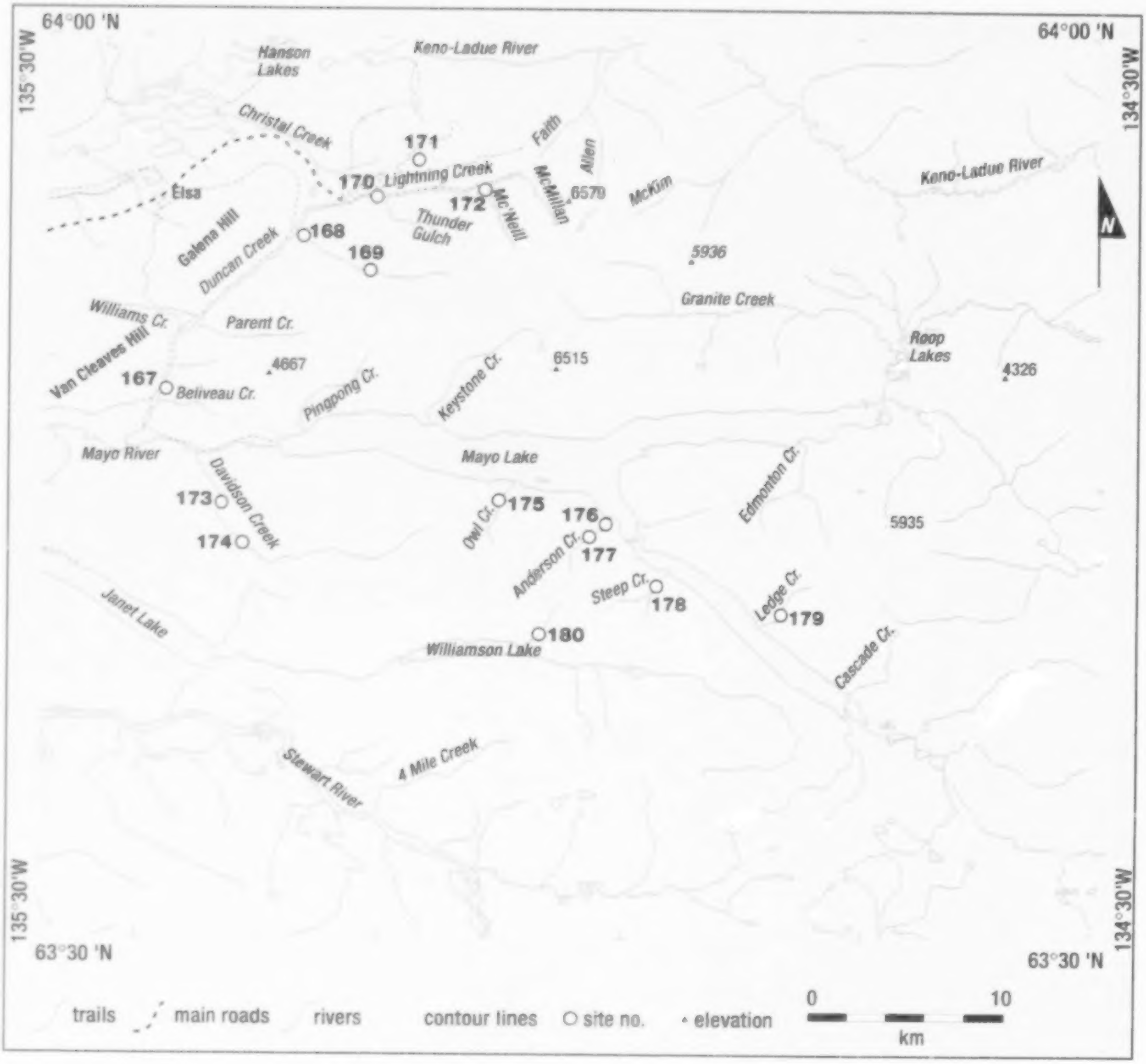
Gold Reported as coarse-grained with a fineness of 915.

Comments The 2002 season of mining was short due to fuel shortages and the lack of ability to access the site with additional fuel.

DUNCAN CREEK

PLACER AREA

SITES 167-180


64°00 'N
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Hanson Lakes
Keno-Ladue River
Christal Creek
171
Faith
Allen
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Lightning Creek
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Mc Neill
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Keno-Ladue River
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Thunder Gulch
Galena Hill
Duncan Creek
168
169
5936
Granite Creek
Williams Cr.
Parent Cr.
Roop Lakes
Van Cleaves Hill
4667
6515
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167
Beliveau Cr.
Pingpong Cr.
Keystone Cr.
Mayo River
Mayo Lake
Davidson Creek
Edmonton Cr.
173
175
Owl Cr.
176
174
Anderson Cr.
177
5935
Steep Cr.
178
Ledge Cr.
179
Janet Lake
180
Williamson Lake
Cascade Cr.
Stewart River
4 Mile Creek
63°30 'N
trails
main roads
rivers
contour lines
site no.
elevation
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km

LEGEND

167..... Duncan Creek GoldDusters, Duncan Creek
168..... Joe Raab, Duncan Creek
169..... M. Zemenchik, Duncan Creek
170..... Bardusan Placers, Lightning Creek
171..... Lucien Roy, Hope Gulch
172..... Kim Klippert, McNeil Gulch
173..... Paul Rivest, Davidson Creek
174..... Bruce Rivest, Davidson Creek
175..... Ralph Barchen, Owl Creek
176..... Margrit Wozniak, Anderson Creek
177..... 20861 Yukon Inc. Anderson Creek
178..... Ralph Barchen, Steep Creek
179..... Ralph Barchen, Ledge Creek
180..... Lawrence Dublenko, Williamson Creek

DUNCAN CREEK 105M/14

Duncan Creek GoldDusters	63°49'N 135°10'W
Water Licence: PM94-093	1998, 1999, 2000, 2001, 2002
Duncan Creek Placer Area	**Site no. 167**

Operation/Location Frank Taylor and his family continued mining upstream of camp during 1998 and 1999 in large-scale stripping programs to access pay gravels that increased in depth, as the operation moved downstream, combined with an angled bedrock increasing in depth on the right limit. The depths combined with drain issues and cost increases forced the operation to downsize significantly during 1999 and 2000. In 2001, this operation reduced to a father-son operation working known shallow areas downstream of camp looking for a more economical pay channel. Two 12-hour shifts were worked with up to eight mine employees during 1998 and 1999, which was reduced to two mine workers working 12 to 14-hour shifts for the 2001 and 2002 seasons.

Equipment/Function The operation downsized in 1999 and the mode of operation was changed requiring less equipment and fewer employees working shallower deposits. Three Caterpillar 769C rock trucks, two UH30 excavators, a 988B Caterpillar loader and a D-8H Caterpillar bulldozer were used in 1998 and 1999. By 2001, it was operating with the 988B Caterpillar loader, a D-8H Caterpillar bulldozer and one of the original UH30 excavators. The operation switched to the loader from an excavator for processing pay gravels to the wash plant for the 2001 mining season but reverted to the use of a Caterpillar 330BL excavator in 2002.

Wash Plant Material was fed into a modified, wet vibrating grizzly feeder which was 4 feet wide by 17 feet long. A flume from the grizzly transported material to the screen deck in 1998 and 1999. The screen deck was not utilized after 2000. A nugget trap was used for the gravel discharged by the screen deck and only the ⅝ inch minus fraction entered the actual sluicing area. The sluicing area consisted of two 6-foot wide by 8-foot long runs with 1-inch angle iron riffles which fanned through to four 4-foot wide by 16-foot long sluice

Duncan Creek GoldDusters on Duncan Creek in 1998.

Duncan Creek GoldDusters on Duncan Creek in 2002.

runs with expanded metal riffles for 1998 and 1999. During 1999, a smaller sluice box was built making the operation more mobile

Ground Description Significant differences in ground profiles exist, with 45 to 120 feet of overburden in the 1998 and 1999 mining seasons for operations upstream of the bedrock canyon, to zero to 20 feet of overburden in the 2000 and 2001 mining seasons downstream of the canyon. In a similar manner the pay gravels varied from 2 to 30 feet thick in the 1998 and 1999 mining cuts, but was found to be 10 feet thick with coarse boulders in the 2000 and 2001 mining seasons below the canyon. The pay gravels were found to be thicker in 2002, ranging from 12 feet to 30 feet.

Mining Cuts In 1998, four mining cuts totalling 90,466 banked cubic yards were completed, finishing in frozen clay at the northern end of the mining cut. The 1999 season was a downsizing year which started with a single 50,000 banked cubic yard mining cut above the canyon followed with five mining cuts totalling another 50,000 banked cubic yards located below the canyon. During 2000, 13 smaller mining cuts were worked below the canyon in much shallower gravels totalling 83,700 banked cubic yards. Reclamation work was done over the past three seasons. In the early part of 2001, 11,000 banked cubic yards were mined in three consecutive mining cuts later in the season below the canyon with stripping completed for the 2002 mining season. The 2002 season had six sequential mining cuts on the right limit of Duncan Creek, totalling 60,000 banked cubic yards of stripping with an estimated 34,000 banked cubic yards being sluiced. The mining cut depth was reaching 100 feet by the end of 2002.

Water Supply and Treatment A 10-inch Gorman Rupp trash pump supplied water to the wash plant from Duncan Creek. Settling during 1998 and 1999 was done through established settling facilities located immediately downstream of the canyon, utilizing an out-of-stream drain. New settling facilities had to be constructed during the 2000 and 2001 season immediately downstream of the opened mining cuts.

Gold The grain size of the gold was variable but nuggets were thin, flat and fairly smooth. Fineness ranged between 760 and 820. The 2001 and 2002 seasons produced 85% size 14 Tyler sieve screen or smaller gold.

Comments The water channel and the land-based reclamation for all mining activities since 1999 was completed in the 2001 season for mining below the canyon.

DUNCAN CREEK	105M/14
Joe Rabb	63°20'N 135°53'W
Water Licence: PM00-171	2001, 2002
Duncan Creek Placer Area	**Site no. 168**

Operation/Location Claims were leased to Larry Arnevick and Rick Anderson for mining of claims located immediately below waterfalls on upper Duncan Creek in 2001. No mining occurred in 2002.

Equipment/Function A 225 backhoe was used for ground preparation and feeding the wash plant and a 745 Fiat Allis loader was used for stockpiling pay gravels and disposing of tailings.

Joe Rabb's Duncan Creek operation in 2001. View looking upstream towards the canyon.

Wash Plant An 8-foot by 10-foot hopper with grizzly classified materials to an oscillating 8-foot by 10-foot sluice box for fine gold recovery.

Ground Description There were well-disturbed gravels from previous mining activities over past 100 years. The mining cut from the waterfall downstream was found to be washed gravels with coarse boulders throughout. Considerable evidence was found for prior underground workings, including buried chambers and tools.

Mining Cuts Two cuts were completed in 2001. The first cut below the waterfalls was 25 feet by 100 feet and all material was sluiced to bedrock at 23 feet. The second cut of the season continued downstream for an additional 75 feet. The water channel was restored and land reclamation was completed at year's end. No mining occurred in 2002.

Water Supply and Treatment A stream-side reservoir on Duncan Creek provided the water for a 6-inch Lycoming water pump operating at 1100 igpm to service the wash plant. Effluent from the wash plant ran through the canyon in an armoured drain which ended in a 30 by 30-foot out-of-stream settling pond at the mouth of the canyon.

Gold No significant gold was located. Fines and one nugget were unable to pay expenses.

Comments Narrow channel and tight, steep canyon walls made these claims a challenge to mine.

DUNCAN CREEK 105M/14

Matthew Zemenchick	634°7'N 136°09'W
Water Licence: PM94-126	1998, 1999, 2000
Duncan Creek Placer Area	**Site no. 169**

Operation/Location A small exploratory mining operation of a diversion on the left limit of upper Duncan Creek on the Gold 3 and Gold 4 placer claims. The diversion had been constructed under water licence PM90-085 and has now been mined with an excavator and a small test wash plant.

Mining Cuts The diversion channel located on the Gold 3 and Gold 4 claims was mined downstream for approximately 400 feet with out-of-stream test pits being used for settling ponds to meet a 5.0 ml/l effluent standard.

LIGHTNING CREEK 105M/14

Bardusan Placers Ltd.	63°54'N 135°14'W
Water Licence: PM98-043	1998, 1999, 2000, 2001, 2002
Duncan Creek Placer Area	**Site no. 170**

Operation/Location In 1998, Hans Barchen and his son, Claus, began mining on Lightning Creek downstream of the confluence with Thunder Gulch.

Equipment/Function A UH 20 Hitachi excavator, a Caterpillar D-7 bulldozer and two Caterpillar loaders (980 and a 988) were used for processing material during the operations.

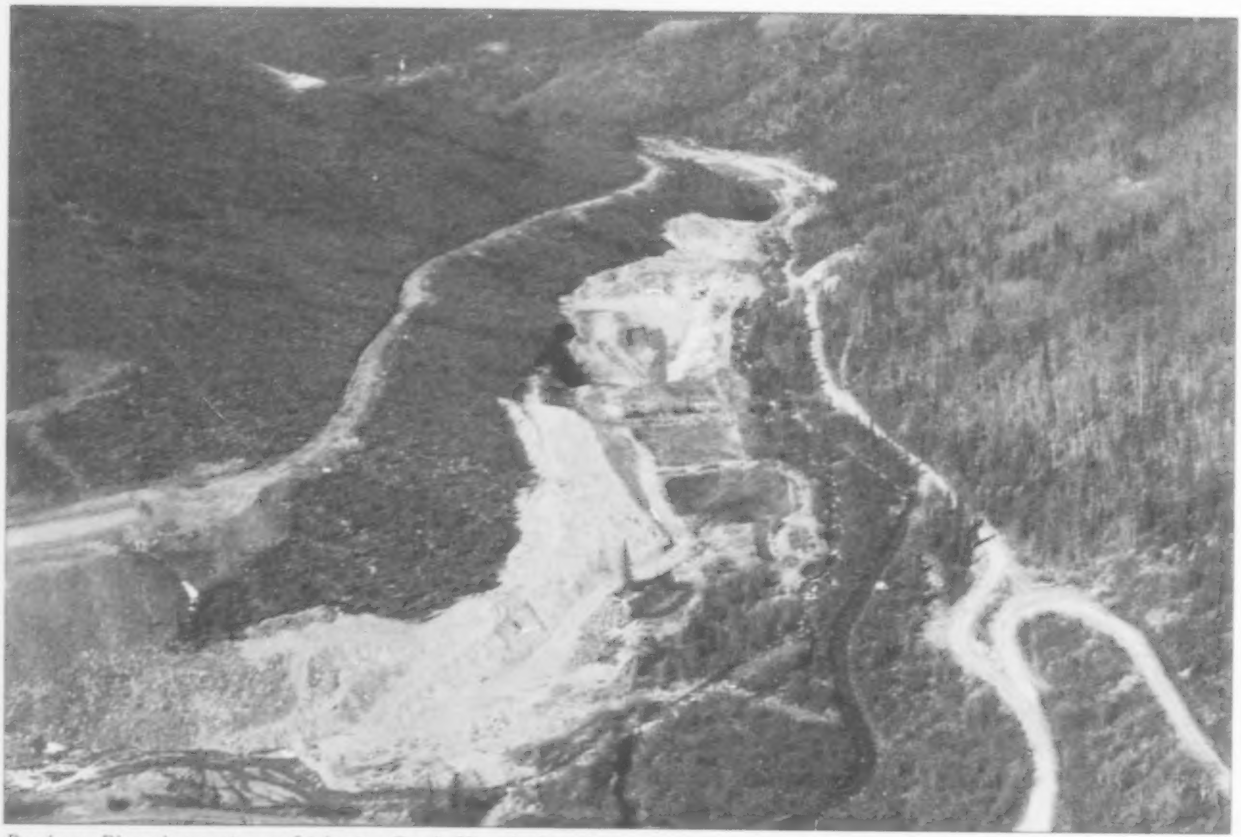
Wash Plant A 10-foot by 20-foot Derocker fed a 3-foot by 24-foot long, double run sluice box. Eighty to 100 cubic yards of material were processed per hour.

Ground Description The ground mined in 1998 was 60 feet to bedrock which progressively got deeper as the mining moved upstream toward the mouth of Thunder Gulch. In 2001, the bedrock was overlain by 75 feet of silty stream gravels mixed with slide rock. The mining in 1999 produced the largest green boulders found in the area.

Mining Cuts The mining in 1998 began with digging a bedrock drain, constructing two settling ponds and mining two cuts totalling 47,000 cubic yards. In 1999, mining continued upstream, processing similar volumes to 1998. Three mining cuts were mined in 2000 totalling 119,863 cubic yards. Total mine cut dimensions in 2000, were 330 feet in length by 140 feet wide and 65-70 feet deep. Two mine cuts in 2001 totalled 101,557 cubic yards with dimensions of 140 feet wide by 280 feet long by 70 feet deep. The 25 feet of materials above bedrock were processed as pay gravels and sluiced. In 2002, an estimated 102,000 cubic yards were processed in three sequential mine cuts, with 40% being sluiced.

Water Supply and Treatment The mine cut was below the water table which, when pumped to drain the cut, provided the water for the wash plant. An estimated 20% of the required water volumes was acquired from Lightning Creek, while the remainder came from ground water in the mine cut. As mining progressed upstream from the 1998 mine cut, a permanent, covered bedrock drain was installed to the settling facilities which allowed placement of waste materials over top of the drain in the narrow valley. Two settling facilities have been utilized, each an estimated 400 feet long by 80 feet wide by 24 feet deep.

Gold Well-worn flattened gold nuggets were produced in 1998, 1999 and 2000 with a fineness of 810. Well-rounded large nuggets were mined in 2001, with 40% being size 4 Tyler sieve screen. Gold recovered in 2002 was flatter and smaller as the mining progressed upstream to the mouth of Thunder Gulch.



Bardusan Placers' operation on Lightning Creek. View looking downstream.

HOPE GULCH-TRIBUTARY TO LIGHTNING CREEK 105M/14

Roy Lucien	63°56'N 135°15'W
Water Licence: PM96-053	1998, 1999, 2000
Duncan Creek Placer Area	**Site no. 171**

Operation/Location This operation was small-scale mining of the alluvial fan located on Hope Gulch below the Keno 700 adit. Contracted equipment was used, when available, for low-scale site preparation in order that hand mining could progressively move upstream. The last mining activity on this licence occurred in 1998 when two miners worked an eight-hour shift for two months.

Equipment/Function The contracted equipment for site work was done with a Caterpillar D-8H bulldozer and an Hitachi UH-143.

Wash Plant A small test wash plant fed by hand was used.

Ground Description The depth to bedrock was 30 feet. The first 8 feet of material was found to be wash outflow from the Keno 700 audit, with the remaining depth to bedrock consisting of gravels.

Mining Cuts A small hand trench was mined on the right limit of Hope Gulch. An estimated 1300 cubic yards were sluiced.

Water Supply and Treatment Water acquisition was from Hope Gulch with a Honda 4 inch water pump, and out-of-stream settling facilities were constructed from a prior mine cut. The hand trench was used as a drain as the mining progressed upstream.

Gold Gold was reported as angular fines with an unknown fineness rating.

MCNEIL GULCH 105M/14

Kim Klippert	63°55'N 135°20'W
Water Licence: PM96-041	1998, 1999, 2000, 2001, 2002
Duncan Creek Placer Area	**Site no. 172**

Operation/Location Kim Klippert and his son have opened a small mining cut on the bottom end of McNeil Gulch. Utilizing the flats in the confluence with Lightning Creek for settling purposes, they have progressively moved upstream working the channel, with a diversion on the right limit to handle full stream flow.

Equipment/Function A D-8H Caterpillar bulldozer with a ripper and U-blade was used for stripping and stockpiling, while an Hitachi UH-143 excavator with a 1½-yard bucket was used to feed the wash plant. A 275B Michigan loader with a 8-yard bucket was used as required for waste disposal and drain maintenance.

Wash Plant A 200 cubic yard per hour wash plant with a 5-foot by 10-foot screen deck classified materials to ⅝ inch minus. A tailings stacker placed the wastes outside of the mining cut while two 8-foot by 10-foot sluice runs washed the pay.

Ground Description Bedrock has not been reached despite the mining cut varying in depth from 25 feet to 55 feet deep. Glacial morraine throughout cut-gold values were found from the surface to the bottom of the mine cut.

Mining Cuts One cut each year in 1998, 1999 and 2000 was mined, approximately 100 feet wide by 175 feet long and varied from 25 feet to 55 feet deep. During 2001, an exploration program on the placer and quartz claims on McNeil Gulch limited the mining to a single cut measuring 125 feet wide by 150 feet long and averaged 35 feet deep. No mining occurred on this property during 2002.

Water Supply and Treatment A Detroit 10- by 8-inch water pump, operating at 1500 igpm, serviced the wash plant from McNeil Gulch stream flows. All effluent was treated in a 200-foot by 200-foot settling pond located at the mouth of McNeil Gulch.

Gold Fine gold was found throughout mine cuts with 90% fines recovered with small nuggets containing traces of quartz attached. The fineness of the gold reported was 760.

Comments Declining base metal prices and escalating fuel prices forced Kim Klippert to conduct an exploration program in the 2001 mining season for long-term planning purposes. This lowered his processing rate by 30% to 19,000 cubic metres.

DAVIDSON CREEK 105M/11

Paul Rivest	63°43'N 135°25'W
Water Licence: PM97-050	1998, 1999, 2000, 2001, 2002
Duncan Creek Placer Area	**Site no. 173**

Operation/Location The mining operation on Davidson Creek was leased twice in the past four years. Cam Arkenstall mined the leased property in 1998 and 1999 and finished the reclamation in 2000. No mining occurred in 2000. In 2001, Kim Klippert optioned the property for testing which was the only activity during 2001. A small mining cut above the canyon on the right limit was mined in 2002.

Equipment/Function Cam Arkenstall used a Fiat Allis 31 bulldozer for stripping and stockpiling pay gravels and a Hough 120 loader was used to move tailings while a 235 excavator fed the wash plant. Kim Klippert used a UH-143 Hitachi excavator with a 1½-yard bucket and a D-8H Caterpillar bulldozer with a U-blade and ripper.

Wash Plant The 1998 and 1999 mining operations used a trommel 7 feet in diameter and 55 feet in length. The 1½ to ½-inch material was fed into a 4 by 40-foot sluice run with hungarian riffles. The ½ inch minus material was processed in a 16 by 11 foot oscillating sluice run with expanded metal over nomad matting. The testing program in 2001 and 2002 used a 4-foot by 8-foot dillan screen deck on the test plant which screened to ½ minus.

Ground Description Ground descriptions varied slightly between operating years but bedrock depth was reported to vary from 4 feet to 20 feet. The shallowest depths were found in the current channel and deepening as the mining moved further from the valley center. A right limit bench cut above the canyon was worked until late October and was found to vary from 10 feet to 40 feet to bedrock as the mine cut moved away from the creek.

Mining Cuts In 1998 and 1999, three claims were progressively mined working upstream from the top of the canyon. During 2001, five test pits were opened above the canyon and a single test pit was sampled below the canyon on the right limit. This area was further mined and developed into out-of-stream settling ponds in 2002 which allowed a single cut to be mined late in 2002 on the right limit on the upstream end of the Davidson Creek canyon. The mine cut was approximately 100 feet by 75 feet by 35 feet deep.

Water Supply and Treatment The 1998 and 1999 mining utilized the Davidson Creek stream flow for the wash plant and the channel for a conduit to the original settling facilities below the canyon. The 2001 testing program was able to process the small water volumes out-of-stream above the canyon. The 2002 mining season utilized the use of the stream as a conduit to new out-of-stream settling ponds located immediately below the canyon on the right limit.

Gold Flat nuggets, comprising 50% of the total, were recovered. Fineness was 830-860. In 2002, the gold was reported to be fine-grained.

DAVIDSON CREEK 105M/11

Bruce Rivest	63°43'N 135°23'W
Water Licence: PM96-077	1998, 1999, 2000, 2001, 2002
Duncan Creek Placer Area	**Site no. 174**

OPERATION/LOCATION Rick Rivest continued exploration, testing and stripping of ground on three claims above the canyon on Davidson Creek.

EQUIPMENT/FUNCTION Exploration was done with a Hy-Hoe 6000TT excavator and a D-6 Caterpillar bulldozer with a Hough 120 loader being used to move tailings. A D-8 Caterpillar bulldozer was used for stripping test areas.

WASH PLANT A 12-foot by 24-inch test sluice box with a trommel unit processed the pay gravels.

GROUND DESCRIPTION Coarse gravels and boulders up to 20 feet thick overlay bedrock in the tested areas.

WATER SUPPLY AND TREATMENT Effluent in testing programs was discharged into out-of-stream pits.

GOLD Seventy percent of recovered values were reported to be coarse gold with a fineness of 860.

OWL CREEK 105M/11, 105M/14

Ralph Barchen	63°45'N 135°30'W
Water Licence: PM01-247	2002
Duncan Creek Placer Area	**Site no. 175**

OPERATION/LOCATION Ralph Barchen operated a one-person mining operation on Owl Creek after testing on Steep Creek. An estimated 400 hours were spent on Owl Creek in 2002. The mining followed a seismic program completed in 2001.

EQUIPMENT/FUNCTION A D9H Caterpillar bulldozer was used for stripping and stockpiling of materials. A 988B Caterpillar loader fed the box and removed the tailings.

WASH PLANT A derocker 10 feet wide by 17 feet long fed minus 2-inch material to an undercurrent sluice run 16 feet long by 4 feet wide. The processing rate was 150 cubic yards per hour.

GROUND DESCRIPTION The ground was 20 feet to bedrock near the apex of the alluvial fan and the lower 10 feet were processed as pay gravels. The top 4 feet of material were described as coarse with well-rounded polished diorites with finer gravels mixed with clay found below.

MINING CUTS In 2002, an estimated 30,000 cubic yards were processed as pay gravels and another 10,000 cubic yards were handled for stripping and ground preparation.

WATER SUPPLY AND TREATMENT An 8- by 8-inch Gorman Rupp trash pump provided water to the wash plant. Out-of-stream settling ponds provided the effluent discharge required.

GOLD Gold values were described as coarse, well-rounded nuggets with a fineness of 840. The largest nugget recovered in 2002 weighed 1 ounce.

ANDERSON CREEK 105 M/11

Margrit Wozniak	63°44'N 135°03'W
Water Licence: PM97-006	1998, 1999
Duncan Creek Placer Area	**Site no. 176**

OPERATION/LOCATION This operation is located on Anderson Creek, a tributary on the south shore of Mayo Lake. The creek channel above the alluvial fan was mined.

EQUIPMENT/FUNCTION A D-7 Caterpillar bulldozer was used to strip, stockpile pay and rip bedrock. A Trojan 453 loader, with 1½-yard bucket, fed the wash plant and stacked the tailings. A 4-inch Kubota water pump utilized the full creek flow when sluicing.

WASH PLANT A dump box fitted with a dry grizzly classified materials for a single run sluice 20 feet long by 3 feet wide.

GROUND DESCRIPTION The average depth to bedrock was 30 feet. About 1 foot of black muck overburden was found throughout the mined areas, underlain by a mix of glacial gravels. The gravels had red layers throughout the vertical profile, with a 1-inch layer of peat overlaying the blue/grey gravels above the bedrock which contained coarse nuggets.

MINING CUTS Mining during 1998, 1999 consisted of a series of alternating cuts mining upstream for a total of 100 feet.

WATER SUPPLY AND TREATMENT Effluent was treated in a series of out-of-stream settling ponds.

GOLD The gold was coarse and angular. Fineness was 870.

COMMENTS The 1999 season was the last for the Wozniak family operation on Anderson Creek, with the transfer of the property to Ray Brosseuk of 20861 Yukon Inc. under a separate water licence (PM99-120).

ANDERSON CREEK 105M/11

20861 Yukon Inc.	63°43'N 135°03'W
Water Licence: PM99-120	2000, 2001, 2002
Duncan Creek Placer Area	**Site no. 177**

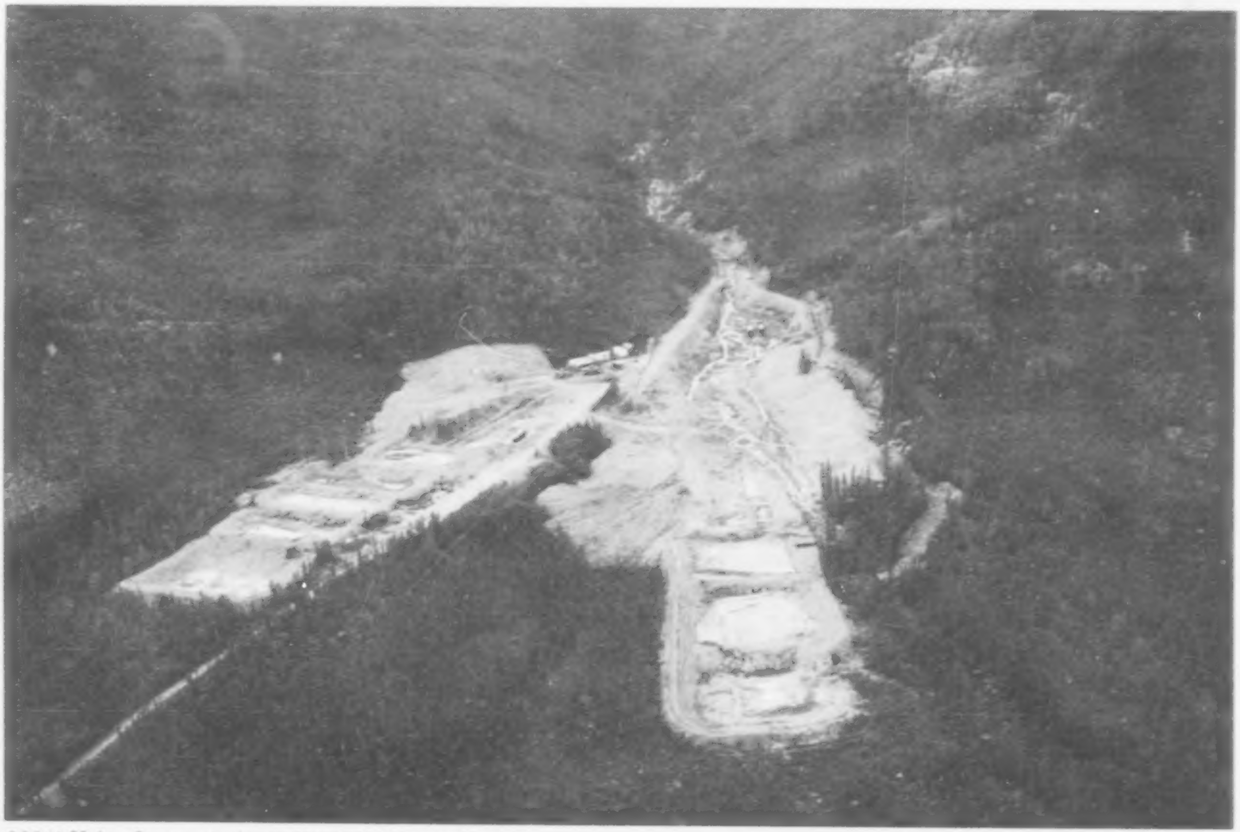
Operation/Location In 2000, the Anderson Creek property was transferred to 20861 Yukon Inc. The alluvial fan has been systematically worked upstream through the previous workings to the steep-walled creek mouth to Mayo Lake. Two 12-hour shifts were worked with 13 staff in 2000. This was downsized in 2002 to seven employees.

Equipment/Function A Caterpillar D-9R, a 950G Caterpillar loader and a Caterpillar 335DL excavator were used to process materials for a single wash plant in 2000. In 2001 and 2002, a second wash plant was used, which was supplied by two Caterpillar 988B loaders with 9-yard buckets and a Case 220B excavator with a 3-yard bucket. The Caterpillar loaders were replaced in 2002 by D-31 Fiat Allis loaders.

Wash Plant A reverse spiral trommel wash plant concentrated pay gravels to minus 1 inch through a 3-foot by 20-foot tail sluice run and a feedback loop to a 18-inch by 16-foot side sluice run. An estimated 8 yards per hour of minus 1 inch concentrate were processed by the side run and 225 cubic yards per hour were processed in the main sluice run.

Ground Description The mining since 2000 has shown the top 10 feet to be loose materials overlaying large boulders in a layer 8 to 10 feet thick which proved to be pay gravels. The layer below the large boulders was defined by compacted coarse gravels in clay which extended down an additional 18 feet and also proved to have reasonable pay values. The final 6 feet to bedrock was described as having bright orange/yellow stains inside a black substrate which proved to have the coarsest pay values located on the property. Bedrock was described as being a decomposing blue schist which was extremely weathered and rotten. Bedrock depths increased each year as the mining progressed upstream. In 2002, mining was done in a sand profile which bottomed out on a scoured sandstone bedrock which deepened from 40 feet to 70 feet when the mining cut changed stream sides from the left limit to the right limit. This activity was located on the alluvial fan immediately below the stream mouth onto the alluvial fan.

Mining Cuts A single mining cut on the alluvial fan was mined in 2000 totalling 100 feet wide by 250 feet long and 40 feet deep. A series of mining cuts in 2001 progressively



20861 Yukon Inc. on Anderson Creek, looking upstream.

mined upstream on the alluvial fan totalling 100 feet wide by 125 feet long by 40 feet deep. In 2001, the operation attempted moving through the canyon to upstream pay values but the clay deposit on the left limit presented serious access problems. In 2002, two mining cuts were done below the stream mouth onto the alluvial fan. The left limit bedrock bench was mined first, totalling 300 feet by 150 feet and was 40 feet deep to bedrock. The deposit was followed across Anderson Creek onto the right limit and another mining cut was developed, totalling 100 feet by 200 feet, which was excavated to bedrock at 70 feet.

WATER SUPPLY AND TREATMENT Water supply was provided by Anderson Creek through a 471 Jimmy 6-inch Monarch water pump operating at 1300 igpm. Effluent was treated in two out-of-stream settling ponds measuring 50 feet by 80 feet in 2000, and a third cell was added in 2001. Additional armouring of the settling ponds in 2001 has stabilized the creek and channel.

GOLD Gold was described as granular with 40% being #4 Tyler screen mesh or larger, and ranging to the 300 mesh size. Fineness of gold values was 890-910.

COMMENTS A full creek seismic program was conducted in 2001 providing the bedrock profile for future mine plans.

STEEP CREEK 105M/14

Ralph Barchen	63°47'N 135°05'W
Water Licence: PM00-191	2002
Duncan Creek Placer Area	**Site no. 178**

OPERATION/LOCATION Ralph Barchen operated a one-person operation on Steep Creek on optioned claims. The alluvial fan of Steep Creek was extensively tested with washing occurring in the central mine cut on the left limit.

EQUIPMENT/FUNCTION A D9H Caterpillar bulldozer was used for stripping and stockpiling of material. A 988B Caterpillar loader fed the box and removed the tailings.

WASH PLANT A derocker 10 feet wide by 17 feet long fed minus 2-inch material to an undercurrent sluice run 16 feet long by 4 feet wide. The processing rate was 150 cubic yards per hour.

GROUND DESCRIPTION The areas mined and tested showed a depth to bedrock of 45 feet with glacial gravels mixed throughout. The apex of the alluvial fan was tested and outflow gravels from Steep Creek were the only materials found to bedrock.

MINING CUTS A central mine cut 200 feet by 100 feet on the left limit of Steep Creek was tested to bedrock at 45 feet and then was used for settling purposes in the remainder of the test program. Material from ten test pits throughout the alluvial fan were washed in the central mine cut in 2002. In total, 30,000 cubic yards were washed with an additional 10,000 cubic yards being stripped for ground preparation.

WATER SUPPLY AND TREATMENT An 8- by 8-inch Gorman Rupp trash pump pumped water to the wash plant at a rate of 1000 igpm.

GOLD Reported fineness value was 950. Gold was reported to be angular and fine-grained.

COMMENTS After extensively testing the alluvial fan of Steep Creek, Ralph Barchen has moved to Owl Creek with plans for fully demobilizing Steep Creek in 2003.

LEDGE CREEK 105M/10

Ralph Barchen	63°42'N 134°47'W
Water Licence: PM98-046	1998, 1999, 2000, 2001
Duncan Creek Placer Area	**Site no. 179**

OPERATION/LOCATION This was a continuation of operations under licence PM94-069 for Ralph Barchen to mine the claims on Ledge Creek held by Bert Liske. A left limit bench at the top of the alluvial fan was mined in 1998 and the forks of Ledge Creek were mined in 1999. The last mining occurred in 2000 with the reprocessing of several old tailing piles on the alluvial fan and the bedrock bench beneath. Final site reclamation was completed in 2000 and 2001, with final site abandonment awaiting a new water licence.

EQUIPMENT/FUNCTION A D9H Caterpillar bulldozer was used for stripping and stockpiling of material. A 988B Caterpillar loader fed the box and removed tailings.

WASH PLANT A derocker 10 feet wide by 17 feet long fed minus 2-inch material to an undercurrent sluice run 16 feet long by 4 feet wide. The processing rate was 100 to 120 cubic yards per hour.

GROUND DESCRIPTION The left limit bench mined in 1998 was frozen gravels to bedrock at 40 feet with 4-foot boulders throughout. The mining at the forks of Ledge Creek was done in confined working areas with shallow bedrock overlain by glacial till with large boulders. The mining in 2000 below the reprocessed tailings had 5 feet to 10 feet of gravels to the bedrock bench.

MINING CUTS The 1998 season moved 150,000 cubic yards, of which 100,000 cubic yards were washed. The 1999 season processed 130,000 cubic yards in the forks of Ledge Creek, while 30,000 cubic yards were washed in 2000.

WATER SUPPLY AND TREATMENT An 8- by 8-inch Gorman Rupp trash pump, powered by a D311 Caterpillar engine, pumped water to the wash plant. A large out-of-stream settling pond produced no surface discharge.

Gold Largely coarse gold was recovered with a fineness of 790.

UNNAMED TRIBUTARY TO WILLIAMSON LAKE (NORTH SHORE) 105M/11

Lawrence Dublenko	63°39'N 135°06'W
Water Licence: PM97-064	1998, 1999, 2000, 2001, 2002
Duncan Creek Placer Area	**Site no. 180**

Operation/Location Lawrence Dublenko and his wife, Connie, have been developing an unnamed and unmined tributary to Williamson Lake located along the northeast shore. Access has been difficult, limiting the 1998 and 1999 seasons to an exploratory trench on the upper stream reaches and stripping to permafrost on the lower primary exploration area. Testing with a portable sluice box of four additional areas along the creek continued in the 2000 and 2001 seasons and the primary exploration area was stripped as the permafrost allowed. The 2002 season saw the primary exploration area on the left limit developed into a closed cell mining cut.

Equipment/Function A Case 850 crawler with bucket was the only equipment utilized during 1998 and 1999. A Caterpillar D-8 bulldozer was used for opening the winter trail one winter with particularly deep snow packs. The 2000 and 2001 seasons saw the addition of a Caterpillar D-6 bulldozer for more effective stripping. As the permafrost melted, additional stripping and testing was completed in 2002.

Wash Plant The test plant is 3 feet long by 12 inches wide with a small hopper and grizzly attached for more effective gold recovery.

Ground Description Testing found mixed fluvial and glacial till throughout the tested areas without bedrock being reached in any of the trenching.

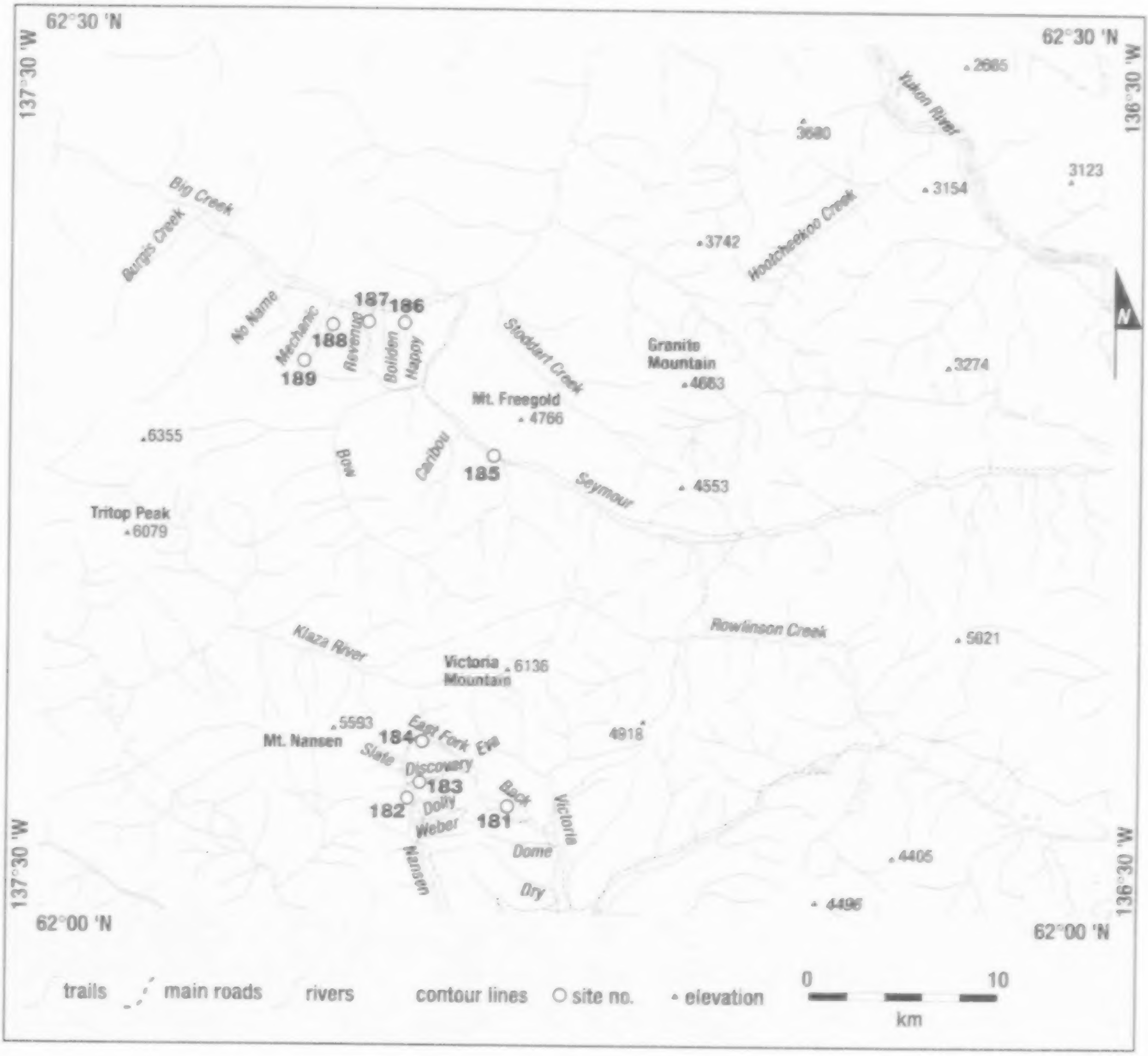
Water Supply and Treatment Limited water requirements with hand testing prevailed in most of the trenched areas while groundwater from the lower trenches was used with the test wash plant.

Gold Only flour gold was recovered in limited quantities.

BIG CREEK-NANSEN

PLACER AREA

SITES 181-189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136°30 'W
2665
Yukon River
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3123
3154
Big Creek
Burgis Creek
Hootchekoo Creek
3742
No Name
Mechanic
187
186
188
Revenue
Bolliden
Happy
189
Stoddart Creek
Granite Mountain
4683
N
3274
Mt. Freegold
4766
6355
Bow
Caribou
185
Seymour
4553
Tritop Peak
6079
Rowlinson Creek
5621
Klaza River
Victoria Mountain
6136
5593
Mt. Nansen
184
East Fork
Eva
Slate
4918
Discovery
183
182
Dolly
Back
181
Victoria
Weber
Dome
Nansen
Dry
4405
4496
137°30 'W
62°00 'N
136°30 'W
62°00 'N
trails
main roads
rivers
contour lines
○ site no.
▴ elevation
0
10
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LEGEND

181..... Bill Trerice, Back Creek
182..... Johnson Exploration, Nansen Creek
183..... Don Frizzell, Discovery Creek
184..... Jack Coghlin, East Fork, Nansen Creek
185..... Ted Tullis, Seymour Creek
186..... David Acker, Happy Creek
187..... Right Fork Mining, Revenue Creek
188..... Hank Fehr, Mechanic Creek
189..... Eric Weineckie (J. & D. Gow), Mechanic Creek

BACK CREEK 115I/3

Bill Trence 62°03'N 137°07'W
Water Licence: PM99-047, LP00021 1998, 1999, 2000, 2001
Big Creek-Nansen Placer Area **Site no. 181**

Operation/Location Bill Trerice has been operating on Back Creek since the 1999 mining season. The 1998 season was spent testing an area in the Klaza River/Iron Creek basin. During the 1999 to 2001 mining season, two miners and one camp personnel worked a single nine-hour shift.

Equipment/Function A Komatsu D355 bulldozer was utilized for stripping while a Caterpillar D-8H was used for tailings removal and feeding pay material to a Case 125B excavator. A Caterpillar 966 loader was also used to feed pay material to the sluice plant as well as for general yard work.

Wash Plant A 4-foot diameter, 20-foot long trommel mounted on a 40-foot trailer was fed by a 4-foot by 8-foot screen deck. Feed material was screed to minus ¾-inch while the oversize was discharged by conveyor. Water was supplied to the wash plant by a 6-inch Monarch electric pump which delivered a pump rate of 1200 igpm.

Ground Description The bedrock in the area was overlain by 4 feet of black muck then 8 feet of glacial till mixed with gravel. The remaining 4 feet of gravels were sluiced along with decomposed bedrock.

Mining Cuts In 1999, two cuts measuring 200 feet by 40 feet and 150 feet by 70 feet were mined. In 2000, two cuts were also mined. The first cut involved the widening of the 1999 second cut, then a cut measuring approximately 200 feet by 75 feet was mined. The 2001 mining season produced four cuts, each of which was approximately 150 feet long by 70 feet wide. The ground was frozen throughout.

Water Supply and Treatment Water was acquired from Back Creek. A series of instream settling ponds were utilized to settle out the effluent.

Gold Ninety percent of the recovered gold was ¼ inch minus while the remaining 10% was ¼ inch plus. The gold is described as very rough, crystalline and wiry. Fineness is 820.

Comments The area of mining activity was in a narrow section of the Back Creek watershed. The right limit was very steep while the left limit was more gradual. Overburden strippings were either pushed sideways or downstream of the mining cuts. Water flows in Back Creek range from very, very small amounts to very high during flood events. Several exploration drill holes were drilled using a churn drill in 2001 in an attempt to delineate pay gravels in the area. Reclamation has been progressive throughout the mining seasons.

NANSEN CREEK 115I/3

Johnson Exploration 62°04'N 137°14'W
Water Licence: PM99-146, LP00153 1998, 1999, 2000, 2001
Big Creek-Nansen Placer Area **Site no. 182**

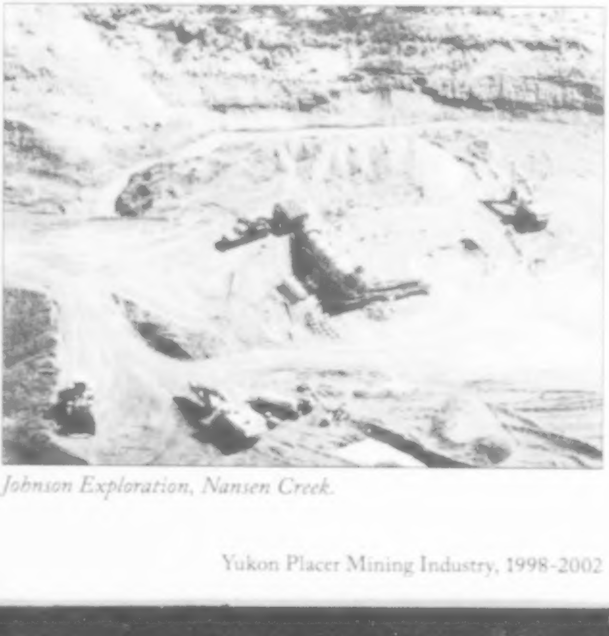
Operation/Location Brian and Loren Johnson began mining on the left limit of Nansen Creek in 1994, working their way upstream from the mouth of Dolly Creek to the mouth of Discovery Creek by 2001.

Equipment/Function A D9H bulldozer with a ripper was utilized for stripping and feeding pay material to the sluice plant while a 966D and a 980C Caterpillar front-end loaders were also utilized for stripping and feeding the sluice. Also on-site were two Caterpillar excavators, a 225 and a 235 used mainly for stripping overburden. In the 2000 mining season, an additional 988B caterpillar loader was added.

Wash Plant A 16-foot belt feeder fed pay material to a 40-foot long by 7-foot diameter trommel. Classified pay material was discharged onto three 26-foot by 10-foot live bottom sluice runs. The sluice runs were lined with 16 feet of 2½-inch expanded metal. Water was fed to the sluice plant by a 4-inch Cummins pump delivering 800 igpm.

Ground Description The stratigraphic section in the area of the operation was consistent throughout the mining seasons. The 4-foot pay section was overlain by 12 feet of sand and gravel then 2 feet of organics. In the 2001 mining season, the operator attempted to hydraulically strip some sandy overburden with the use of a monitor. The pay section was made up of 70% sand and rock and 30% clay.

Mining Cuts In the 1998 to 2000 mining seasons, two cuts were mined each season, averaging 450 feet long by 180 feet wide. In 2001, two cuts were also mined, the first being 235 feet long by 300 feet wide and the second in a pie-shape configuration measuring 900 feet long by 0 to 100 feet wide.



Johnson Exploration, Nansen Creek.

Water Supply and Treatment Water was supplied from Nansen Creek and effluent was settled through seepage into the ground as well as in a series of seven settling ponds.

Gold Of the gold that was recovered, most was in the 40 mesh range, with a few nuggets, some containing quartz. Fineness was 800.

DISCOVERY CREEK 115I/3

Don Frizzell	62°04'N 137°13'W
Water Licence: PM98-058, LP00048	2002
Big Creek-Nansen Placer Area	**Site no. 183**

Operation/Location Don Frizzell operated on Discovery Creek, a tributary to Nansen Creek, in the 2002 mining season. Some of the 2001 mining season and two-thirds of the 2002 mining season were spent doing extensive clean-up of the area, bringing in and setting up equipment and camp. During the 2002 mining season, three miners and one camp personnel worked a single 12-hour shift.

Equipment/Function A Caterpillar D7 bulldozer was utilized for stripping and pushing pay material to a Caterpillar 235 excavator feeding the wash plant. In addition to the bulldozer, a 631 scraper was used for overburden removal and moving washed gravels around the site for road and tailing pond construction. Also on-site was a Caterpillar 966 loader which was used in all aspects of the day-to-day mining operation.

Wash Plant The wash plant consisted of a 20-foot long by 4-foot diameter trommel which was fed 3-inch minus material by a 12-foot by 12-foot hydraulic finger grizzly set at 10 degrees. A 5-foot by 5-foot screen allowed ¾-inch minus material to pass through a nugget trap then onto two, 2-foot by 12-foot oscillating sluice runs. Screened tailings were then broadcasted by a 32-foot stacker. The plant was powered by a 50KVA Dorman diesel generator and processed 45 to 50 cubic yards per hour. Water was supplied by an 8- by 6-inch 671 GM pump delivering 900 igpm.

Ground Description The area of mining activity is in a steep, narrow valley with 2 to 6 feet of partly frozen overburden which contained boulders to a depth of up to 3 feet. Everything was sluiced in order to obtain course materials for road, settling pond and camp construction.

Mining Cuts Mining in the 2002 season consisted of several test pits on the valley sides which revealed minor quantities of fine gold. A small test area, 20 feet by 150 feet, was sluiced from the left limit of Discovery Creek.

Water Supply and Treatment Water was supplied through re-circulation and obtained from the number 2 settling pond. A series of two in-stream settling ponds were utilized to settle out the effluent.

Gold Most of the recovered gold consisted of fines with a few small nuggets weighing 3 to 8 grams. Colour was dull with a rough texture. Fineness of the gold has not been tested.

Comments This was the first year of mining after five years of building the plant and acquiring the equipment and camp. The operator reports that the new wash plant (designed and built by Mr. Neal Duncan) worked extremely well.

EAST FORK NANSEN CREEK 115I/3

Jack Coghlin	62°06'N 137°12'W
Water Licence: PM97-051	1998, 1999, 2000, 2001, 2002
Big Creek-Nansen Placer Area	**Site no. 184**

Operation/Location This operation is located on the East Fork of Nansen Creek. Jack Coghlin and Beryl Potter operated a single 9- to 10-hour shift per day and have been mining in this location since 1995.

Equipment/Function A D9H and a D7F bulldozer, both equipped with U-blades and rippers, were utilized for stripping and pushing up pay gravels to be sluiced. A 6-cubic yard Trojan loader was used to feed the sluice plant and move tailings.

Wash Plant The wash plant consisted of a 6-foot by 24-foot trommel fed by a 10-foot by 16-foot hopper. Feed to the sluice runs were screened to ½ inch. The sluice run was 2 feet by 24 feet long and was lined with 2 feet of riffles. The amount of pay material processed was in the order of 30 to 40 cubic yards per hour.

Ground Description The stratigraphic section of the mining area was generally consistent through the 1998 to 2001 mining seasons. Overburden was 2 to 4 feet in thickness overlying about 4 feet of gravels. The pay zone was generally 3 to 4 feet thick and the size of material ranged from pebble

Jack Coglin's East Fork Nansen Creek operation.

size to boulders up to 12 inches. The mining cuts did not reach bedrock in the area and during the processing of pay gravels, some clay was sluiced.

MINING CUTS There is no data as to the size of mine cuts for the 1998 and 1999 mining seasons. In 2000, a single cut measuring 150 by 200 feet and in 2001, a cut was mined with the dimensions of 100 by 500 feet. In 2002, there were two mining cuts measuring 60 by 100 feet and 60 by 300 feet. The tailings produced were used to armour the diversion channel and any excess was placed into the previous years mining cuts.

WATER SUPPLY AND TREATMENT The settling facilities for this operation were out-of-stream. There were a series of settling ponds utilized, the largest of which measured 100 by 50 feet and was 12 feet deep. During periods of low water, the operator recycled 100% of the process water and during periods of normal water flows, a 40% recycle rate was employed. Water to the sluice plant was provided by a Flyte 6-inch pump powered by a GM electric motor delivering 800 igpm. Water was obtained from East Fork, Nansen Creek.

GOLD The gold in this area ranges from very fine to rough. The operator encountered some nugget-sized gold but most was around 35 to 50 mesh. Fineness ranged from 790 to 820.

Jack Coglin's East Fork Nansen Creek operation.

SEYMOUR CREEK 115I/6

Ted Tullis 62°18'N 137°18'W
Water Licence: PM00-205, AP00205, PM99-031, LP00119 2000, 2001
Big Creek-Nansen Placer Area **Site no. 185**

OPERATION/LOCATION Ted Tullis moved to this site in the fall of 1999 to mine under Bill Harris's water licence and mining land use approval. In the 2000 season, three miners and one camp employee ran two 10-hour shifts per day. However, in 2001, Mr. Tullis worked alone at another location further upstream on the right limit of Seymour Creek. Mr. Tullis acquired his own water licence and mining land use approval for this location. No mining was conducted during the 2002 mining season.

EQUIPMENT/FUNCTION A 980B Caterpillar loader was used to stack tailings, while a 450 Mitsubishi excavator fed the wash plant. A 355 Komatsu bulldozer equipped with a ripper performed stripping and reclamation work.

WASH PLANT In 2000, a 6 by 16-foot double deck screen plant on skids was connected to two 4 by 8-foot side sluice runs for processing gravels. A vibrating grizzly feeder dealt with the bouldery material. A conveyor measuring 30 by 40 inches took away tailings. The 6-inch submersible Flyte pump was powered by a 125 kilowatt generator and was capable of processing about 100 cubic yards per hour. However, in 2001, Mr. Tullis reverted to the trailer-mounted trommel set up, as described in his report on Nansen Creek. A jig and a wheel were used for final clean-ups.

GROUND DESCRIPTION About 3 feet of silty overburden covered 15 to 20 feet of gravel which was composed of material anywhere from sand-sized to rocks measuring 20 inches in diameter. The 3 feet was pushed aside for reclamation at conclusion of the operation and the rest was sluiced.

MINING CUTS In 2000, three different areas were mined totalling approximately 26,000 cubic yards of material moved. Only one cut measuring 100 feet by 75 feet by 30 feet deep was mined in 2001 due to a delay in the new water licence issue.

WATER SUPPLY AND TREATMENT A reservoir pond collected water for sluicing from Seymour Creek and effluent was treated in two out-of-stream settling ponds, measuring approximately 100 feet by 50 feet in size.

GOLD While most of the gold was thin, flaky and very fine, some jagged, rock encrusted nuggets were recovered in 2001. Fines were 850.

COMMENTS Reclamation was completed on the initial site in 2001. Mr. Tullis noted that gold was not in sufficient quantities to be viable.

Dave Acker on Happy Creek.

HAPPY CREEK 115I/6

Dave Acker	62°21'N 137°21'W
Water Licence: PM97-043	1998, 1999, 2000, 2001, 2002
Big Creek-Nansen Placer Area	**Site no. 186**

Operation/Location Mr. Acker's operation is located on Happy Creek which is a tributary of Big Creek. Mining has been ongoing since 1998 when the water licence was issued.

Equipment/Function Several types and sizes of equipment have been utilized at the operation. Mainly, a bulldozer is used to strip overburden and to push pay gravels into piles, then a loader would feed the sluice plant.

Wash Plant A small screen deck was utilized to process pay material.

Water Supply and Treatment Water was obtained primarily by recirculating from the final settling pond. Total creek flow from Happy Creek was diverted in the settling pond system.

REVENUE AND MECHANIC CREEKS 115O/14

Right Fork Mining	62°20'N 137°17'W
Water Licence: PM99-053/99-149, LP00036	1998, 1999, 2000, 2001
Big Creek-Nansen Placer Area	**Site no. 187, 188**

Operation/Location Both Revenue and Mechanic creeks are right limit tributaries of Big Creek in the Mt. Freegold area. John, Buddy and Diane Gow worked single shifts from 1998 to 2001, joined by Phil Gow on his summer vacations.

Equipment/Function An American 35 excavator with a 1⅞-cubic yard digging bucket was used to feed the sluice plant. An 890 John Deere excavator with a 1½-cubic yard digging bucket was used to clean out settling ponds and perform stripping. A Caterpillar 980B loader hauled tailings away and a D9L Caterpillar bulldozer was used to do stripping and re-contour tailings. An additional D7 Caterpillar bulldozer was used to push pay material to the excavator and for other odd jobs.

Wash Plant Thirty-five loose cubic yards of pay material per hour were fed into a 4-cubic yard hopper attached to a vibrating screen deck measuring 4 feet wide by 10 feet long. Materials passed through a 4-inch screen, a 2-inch screen and a ⅝-inch screen before entering a triple run sluice, 10 feet wide by 20 feet long. The first 10 feet were lined with 6-pound expanded metal and the bottom 8 feet held Hungarian riffles. Nomad matting lined the entire sluice run, the expanded metal portion of which had a 1¾-inch per foot slope. The riffle section was sloped at 3 inches to the foot. A 20 kilowatt generator powered by a Perkins diesel ran the screening plant.

Ground Description Revenue Creek disclosed a total depth of 60 feet of frozen material at the point where it enters the Big Creek valley. Sand, silt and fine gravels comprised the top 40 to 45 feet of layered black muck. The next 15 to 20 feet was the same material, only mixed with rock ranging from 3 feet to nearly 10 feet in diameter which posed quite a challenge, with a final clay layer covering the bedrock. Fine gold was found in all layers up to 5 feet from the surface and consequently, the bottom 30 to 40 feet had to be sluiced. Upper Revenue Creek, on Whirlwind Pup, decreased slightly to 55 feet of frozen material. Forty feet consisted of silt and ice, and the lower 15 feet were gravel, sand and a small amount of coarse rock which was the portion sluiced. Mechanic Creek, an upstream right limit tributary of Big Creek, consisted of a total depth of 40 feet of frozen material on the lower portion that has been mined to date. The top 5 to 8 feet was composed of moss, ash and silt. The remaining gravels ranged in size from fine to 50% very coarse. Large boulders ranging from 2 to 4 feet in diameter were scattered on top of the bedrock. Once again, gold was found in all gravels and the bottom 30 to 35 feet were sluiced.

Right Fork Mining on Mechanic Creek.

MINING CUTS In 1998, the previous year's cut was completed and a second cut 75 feet by 125 feet was mined. Total cubic yards sluiced were 19,365. A cut 80 feet by 200 feet was mined in 1999 on the lower left limit of Revenue Creek. Combined with 4000 cubic yards of material which had been stockpiled while stripping on Whirlwind Pup in 1996, a total of 17,700 cubic yards were sluiced. The balance of the Whirlwind material, in addition to a cut 100 feet by 25 feet by 12 feet, was sluiced in 2000. On Revenue Creek, a cut 100 feet by 20 feet was mined, out of which 3560 cubic yards were sluiced. Heavy rainfall, Boliden Hill road construction, losing an engine in the 890 John Deere excavator, plus low gold values, severely hampered the 2000 mining season on Revenue Creek. By September of 2000, however, the operation was ready to move to Mechanic Creek and begin preparation of the ground for mining and to do site cleanup from previous operators. Despite all, a total of 4500 cubic yards were sluiced that fall. Early in the 2001 season, a cut 130 feet by 280 feet by 30 feet deep was made on Mechanic Creek and partially mined, sluicing a total of 12,500 cubic yards.

WATER SUPPLY AND TREATMENT Water was acquired on Revenue Creek using in-stream recirculating ponds at a rate of 800 igpm with a 6- by 6-inch Gorman Rupp trash pump. The effluent was treated in a series of these in-stream ponds before the final point of compliance. In the fall of 2000, water was acquired from an instream settling/recirculating pond on Mechanic Creek at the same rate using the same equipment and treating effluent in the same pond. The only discharge was seepage from this pond. In 2001, an out-of-stream pond was constructed. Water from the previous year's settling/recirculating pond was pumped to this out-of-stream facility and refilled with clean water to be used as a reservoir. No seepage and no discharge to Mechanic Creek occurred in 2001.

GOLD Some of the gold was coarse and wiry. Beady round balls up to 6.1 grams in weight were recovered. Of the fine gold, 50 to 60% was 4/50 mesh size, 20% was 20 mesh and the balance was -80 to -200 mesh. Fineness ranged from 890 to 910. The majority of gold recovered at Mechanic Creek was 40/50 mesh size and smaller, with a purity of about 900.

COMMENTS Since 1998, an increase in rainfall has caused road washouts. Bulletin Hill area washed out twice during 1998. Once again in 1999, this portion of the road washed out. Road repairs were performed by the combined efforts of the miners in this area. In 2000, the washout was irreparable, so the government and two of the miners in the area relocated nearly ½ mile of road. Approximately 6300 cubic yards of tailings were hauled from lower Revenue Creek for this purpose which took eight days to complete. Twice in 2001, about 300 feet of the road washed out along lower Seymour Creek. The road has yet to be repaired. In accordance with the new mining land use regulations, a fuel station with liner was constructed on lower Revenue Creek, about 200 feet from the high water mark. Bill LeBarge, Mark Nowosad and Tanya Gates spent some time in this area during the 1999 mining season sampling and gathering data for the Yukon Placer Deposit and Water Quality Sampling Program. Twelve conservation students, three mining administrators from Zimbabwe and two mining inspectors paid visits in 2000. The students did a placer inspection, while the people from Zimbabwe were interested in the mining inspection regime employed in the Yukon compared to their own country.

MECHANIC CREEK 115I/06

Hank Fehr	62°20'N 137°11'W
Water Licence: PM97-076	1998, 1999, 2000, 2001, 2002
Big Creek-Nansen Placer Area	**Site no. 189**

OPERATION/LOCATION Mr. Fehr's operation was located on Mechanic Creek which is a tributary of Big Creek. One miner worked a single 10-hour shift.

EQUIPMENT/FUNCTION Equipment on-site consisted of a bulldozer utilized for stripping, an excavator and a front-end loader for feeding pay material to the sluice plant and for general site maintenance.

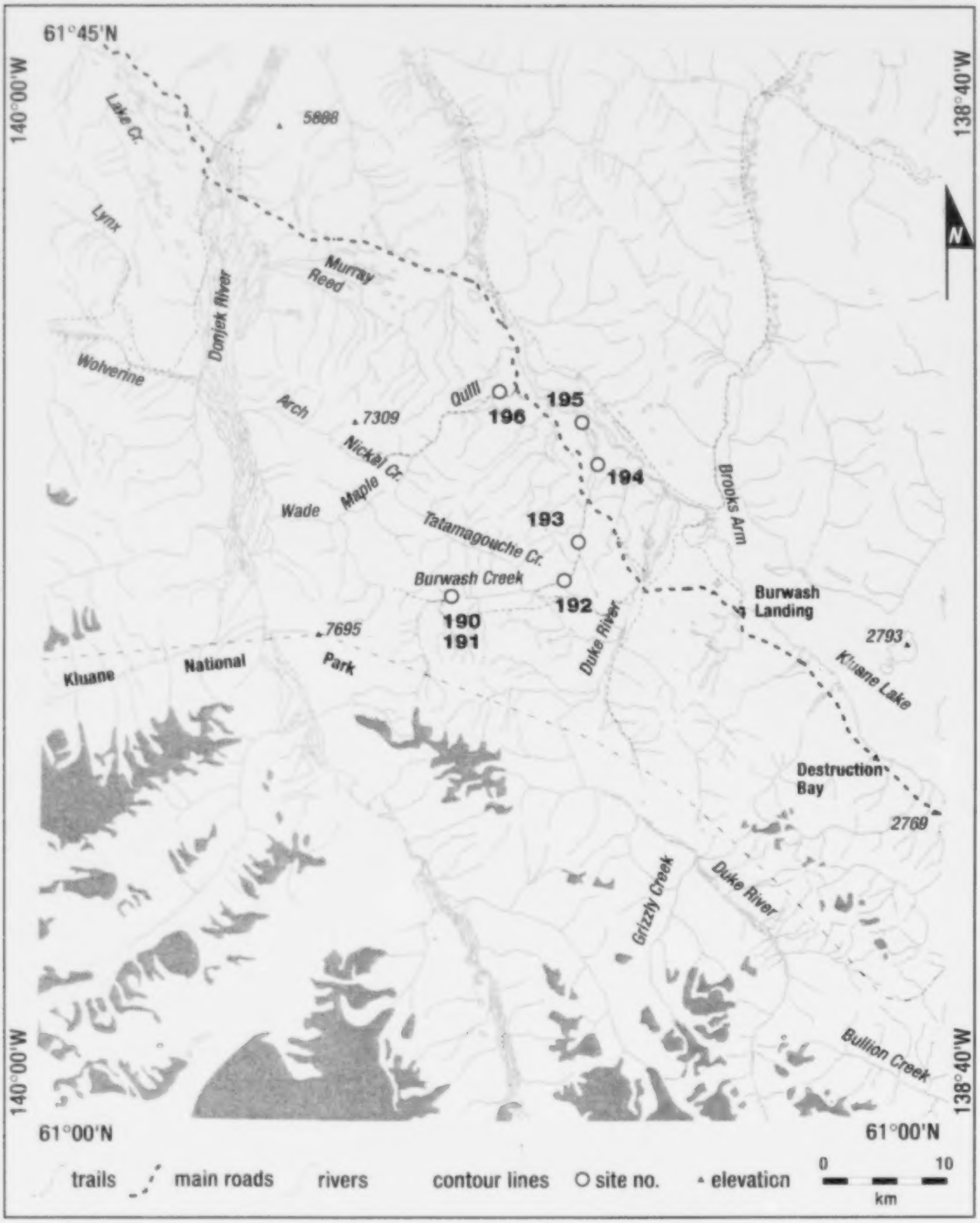
WASH PLANT The particulars of the washplant are unknown, however it is a trommel setup with a single sluice run.

WATER SUPPLY AND TREATMENT Water was supplied to the plant from Mechanic Creek and effluent was treated through a series of in-stream as well as out-of-stream settling ponds.

Hank Fehr's operation on Mechanic Creek.

KLUANE
PLACER AREA

SITES
190-196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main roads
rivers
contour lines
○ site no.
▴ elevation
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LEGEND

190..... Brian Hutchinson, Burwash Creek
191..... Oliver Leckie, Burwash Creek
192..... Steve Johnson, Burwash Creek
193..... Oliver Leckie, Burwash Creek
194 ..... Charles Eikland, Sr., Burwash Creek
195..... Wayne Mitchell, Burwash Creek
196 .... Willi Pfisterer, Quill Creek

BURWASH CREEK 115G/6

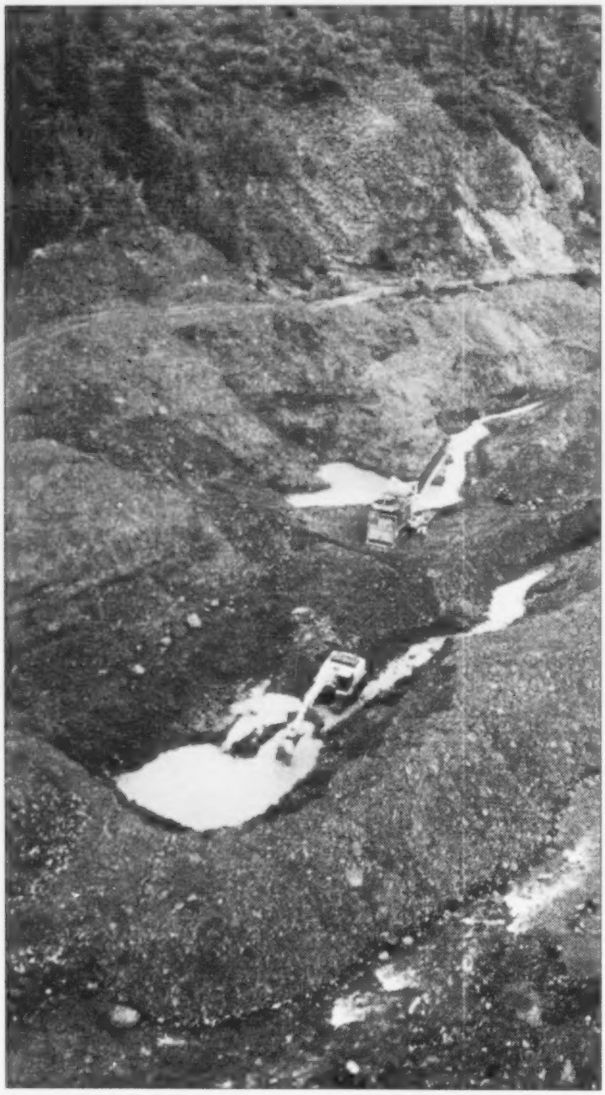
Brian Hutchinson	61°22'N 139°22'W
Water Licence: PM99-126	2000, 2001
Kluane Placer Area	**Site no. 190**

Operation/Location This property was located above Tatamagouche Creek on upper Burwash Creek and was worked during the mining seasons of 2000 and 2001.

Equipment/Function In 2000, a 400 Komatsu and a 300 Komatsu were used to feed the screen plant. In 2001, a Koehring excavator was used to feed a shaker wash plant and a Fiat Allis bulldozer was used to push tailings.

Wash Plant A shaker wash plant was used.

Ground Description In the immediate claims area, the ground encountered was comprised of boulders, gravel, sand and silt bands ranging from 6 to 12 metres. Blocky igneous bedrock has been mixed into the overburden column. Most gravels have been well washed and the fine sediments removed. This area was generally free of brush.



Brian Hutchinson's operation on Burwash Creek.

Mining Cuts The mining cuts made in 2000 consisted of two 125-foot wide by 750-foot long trenches which were 10 feet and 15 feet deep.

Water Supply and Treatment Three medium-sized settling ponds were constructed to handle the effluent.

Comments Between 1995 and 2001, water licence PM95-020 was issued to Oliver Leckie to cover mining activity on this ground. Mr. Leckie's last year of operation on this site was 1999 when Mr. Hutchinson purchased it.

BURWASH CREEK 115G/6

Oliver Leckie	61°23'N 137°13'W
Water Licence: PM95-031	1998, 1999
Kluane Placer Area	**Site no. 191**

Operation/Location In 1998, this site was moved to upper Burwash Creek after testing under water licence PM95-020 was completed. This operation was located on lower Burwash Creek. A crew of three people mined this site for approximately eight hours a day. Both the right and left limits were worked.

Equipment/Function A D-8 Caterpillar equipped with an angle blade, a 920 Caterpillar loader with a 2-cubic yard bucket and a 690 John Deere excavator with a ¾-cubic yard bucket were used to perform various tasks.

Wash Plant A 44-inch diameter trommel with a 3-foot wide by 10-foot long sluice run outfitted with 1½-inch riffles and Nomad matting processed the pay gravels at a rate of 20 cubic yards per hour.

Ground Description The ground was worked to a depth of 20 feet. The material encountered in this zone was half frozen and half thawed, with some clay content. Bedrock was wavy in nature.

Mining Cuts One cut that was 200 feet by 125 feet in dimension was made. Approximately 500 cubic yards were removed over a two-year period.

Water Supply and Treatment A 6-inch Thompson pump powered by a 635 Perkins diesel was used to supply 500 igpm from an in-stream reservoir. The effluent discharged into two out-of-stream settling ponds that were 50 feet long by 20 feet wide and 10 feet deep and 100 feet long by 40 feet wide by 10 feet deep respectively.

Gold The gold was 60% fine with very few nuggets. It was flat and angular in shape.

BURWASH CREEK 115G/6

Steve Johnson	61°23'N 139°20'W
Water Licence: PM99-148	2000, 2001, 2002
Kluane Placer Area	**Site no. 192**

Operation/Location Mr. Johnson's operation was located immediately upstream from the "S" canyon on the right limit of Burwash Creek. Some site cleanup was done in 2002, however, mining activity was minimal. In 1998, until 2001, two miners and one camp attendant operated one 12-hour shift. In 2002, the work force consisted of two miners.

Equipment/Function A Caterpillar D-8H was used for stripping, levelling and for the construction of settling ponds, and various excavators with 1½ to 1¼-cubic yard buckets were used for feeding the sluice box, ditching and removing overburden. In 2000, a 977L wheeled loader was used for removing tailings and in 2001, a Komatsu was used to complete this task.

Wash Plant The wash plant consisted of a 5-yard hydraulic dump box, with a fixed push ram that fed a Cassiar-style oscillating 5-foot by 10-foot section of 1-inch punch plate with 12 fixed wash nozzles. The 1-inch minus was fed to the sluice run that was comprised of a slick plate, nugget trap that was fed with low-pressure water, 2 feet of 1-inch riffles spaced 4 inches apart, 4 feet of hydraulic riffles, 4 feet of 1-inch riffles over Nomad mat and 4 feet of expanded metal over Nomad mat. The pump used was a Valley 6-inch powered by a Lister diesel engine that was capable of producing 600 imperial gallons of water per minute.

Ground Description The area of mining activity was generally comprised of 6 feet of pay channel with approximately 16 feet of unfrozen creek gravel overburden. Some clay and black muck was found and saved for future reclamation.

Mining Cuts In 1998 and 1999, a total of three cuts were made, 50 feet wide by 150 feet long by 18 feet deep each. In 2000, two cuts were made, 50 feet wide by 150 feet long by 8 feet deep each. In 2001, two cuts were made, 50 feet wide by 200 feet long. In 2002, the cut from 2001 was worked and minimal ground was moved.

Water Supply and Treatment Water was obtained from a stream pond on Burwash Creek between 1998 and 2000. In 2001, water was pumped out of a previous cut that was flooded. Water treatment was out-of-stream and was accomplished through the construction of two settling ponds that were 50 feet wide by 150 long by 6 feet deep.

Gold The gold was mostly flat nuggets and flakes that were well travelled. The approximate size was 30% ¼ inch and larger, and 70% ¼ inch minus. Fineness was 860.

Comments Restoration was ongoing and the cut worked in 2002 was backfilled. The presence of ground water in the cuts created additional work.

BURWASH CREEK 115G/6

Oliver Leckie	61°23'N 139°14'W
Water Licence: PM95-031	1998
Kluane Placer Area	**Site no. 193**

Operation/Location The property was located above Tatamagouche Creek on upper Burwash Creek and was worked briefly during the 1998 mining season. The work force consisted of three personnel who ran a daily shift of five hours for approximately one month.

Equipment/Function A D8 Caterpillar bulldozer was used to strip, and a 690B John Deere excavator was used to feed the wash plant. A 920 Caterpillar loader was also used to perform various tasks.

Wash Plant A 44-inch diameter trommel with a 3-foot by 10-foot sluice run with 1½-inch riffles and Nomad matting was used to recover the gold. This setup was placed on a slope of 1½ inches per foot. The processing rate was 20 cubic yards per hour.

Ground Description The average valley width in this area was approximately 200 feet. The area worked was to a depth of 12 feet which consisted of frozen and thawed ground made up of average-sized material, decomposed bedrock and some clay.

Mining Cuts Material processed was from four test holes.

Water Supply and Treatment Water was supplied by a Thompson 6-inch pump powered by a 635 Perkins diesel which produced 450 gallons of water per minute. Water was obtained from Burwash Creek. There was no discharge.

Gold The gold recovered consisted of small nuggets with a fineness of 860.

Comments Reclamation occurred as mining progressed.

LOWER BURWASH CREEK 115G/6

Charles Eikland Senior	61°25'N 139°14'W
Water Licence: PM00-179	2001, 2002
Kluane Placer Area	**Site no. 194**

Operation/Location Mr. Oliver Leckie tested and mined this property in 2001. In 2002, Mr. Dale Hall mined on the right limit of this site. The number of personnel was one miner and one camp attendant who ran a five-hour shift.

Equipment/Function A John Deere 690B excavator was used to feed the trommel and a D8H Caterpillar bulldozer was used to clear tailing and for pushing up pay gravels.

Wash Plant A 44-inch by 20-foot trommel which screened the material to ⅜-inch and ½-inch was used. The hopper was 8 feet long by 6 feet wide and had a 12-inch by 18-inch nugget trap. The pay gravel went into a 22-inch by 8-foot long sluice run.

Ground Description There were 3 feet of topsoil over 8 feet of gravel with small boulders before bedrock was encountered. The area worked was not frozen and was relatively flat.

Mining Cuts In 2001, 4900 cubic yards of material was taken from one cut. One cut was made in 2002 that was 165 feet wide by 180 feet long by 8 feet deep. Approximately 8800 yards of material were moved.

Water Supply and Treatment Water was obtained from a ditch off of Burwash creek with a Thompson 6-inch pump that was powered with a 635 Perkins diesel engine and was capable of providing 450 imperial gallons per minute. No water was returned to Burwash Creek as the four settling ponds were capable of total containment of the effluent.

Gold The gold was fine and flat and quite bright in colour. It appeared to be well travelled. Fineness was 740.

Comments Mr. Dale Hall completed mining and reclamation of this property in August of 2002. The generous supply of topsoil assisted greatly in reclamation efforts.

BURWASH CREEK 115G/6

Wayne Mitchell	61°25'N 139°14'W
Water Licence: PM00-187	2001
Kluane Placer Area	**Site no. 195**

Operation/Location Mr. Mitchell was working on lower Burwash Creek during 2001. The work force consisted of one miner and one camp attendant who worked eight-hour shifts.

Equipment/Function A Komatsu 220 excavator performed all the required work.

Wash Plant A trommel with a 36-inch barrel, 14-foot wet hopper, 22-foot stacker conveyor with a 5-foot by 12-foot sluice run was used.

Ground Description The overburden consisted of 10 to 13 feet of cobbles with some larger rocks that were approximately 3 feet in diameter. The 3-foot pay zone was then encountered which was a rusty clay, sand, cobble mix.

Mining Cuts Approximately 200 cubic yards of material were moved from 13 test pits.

Water Supply and Treatment Water was obtained from Burwash Creek and was supplied by a Monarch 5-inch by 6-inch pump powered by a Deutz diesel that was capable of producing 700 imperial gallons of water per minute. Effluent was treated by a series of three ponds.

Gold The gold from this area was fine, flat and bright in colour.

Comments Mr. Mitchell has moved to Judy Creek.

QUILL CREEK 115G/6, 11

Willi Pfisterer	61°31'N 139°20'W
Water Licence: PM99-042	1998, 1999, 2000, 2001, 2002
Kluane Placer Area	**Site no. 196**

Operation/Location Mr. Willi Pfisterer mined primarily on the left limit of Quill Creek from 1998 until 2001. Restoration work was done at the end of each season. In 2002, Mr. Pfisterer sold his property to Mr. Joe Nichols who conducted stripping, testing and some limited sluicing on the right limit of Quill Creek.

Equipment/Function Equipment on-site was a 850 Case and a Link Belt 2800 excavator. Both pieces of equipment were used for testing, stripping and feeding the sluice box.

Wash Plant A typical 4-foot by 8-foot grizzly with spray bar over a single run 12-foot sluice was used to process 10 loose cubic yards of material per hour.

Ground Description The valley width of Quill Creek in this area provided ample room for the construction of settling facilities. The ground was made up of gravel with a few small boulders. Glaciation was encountered each spring.

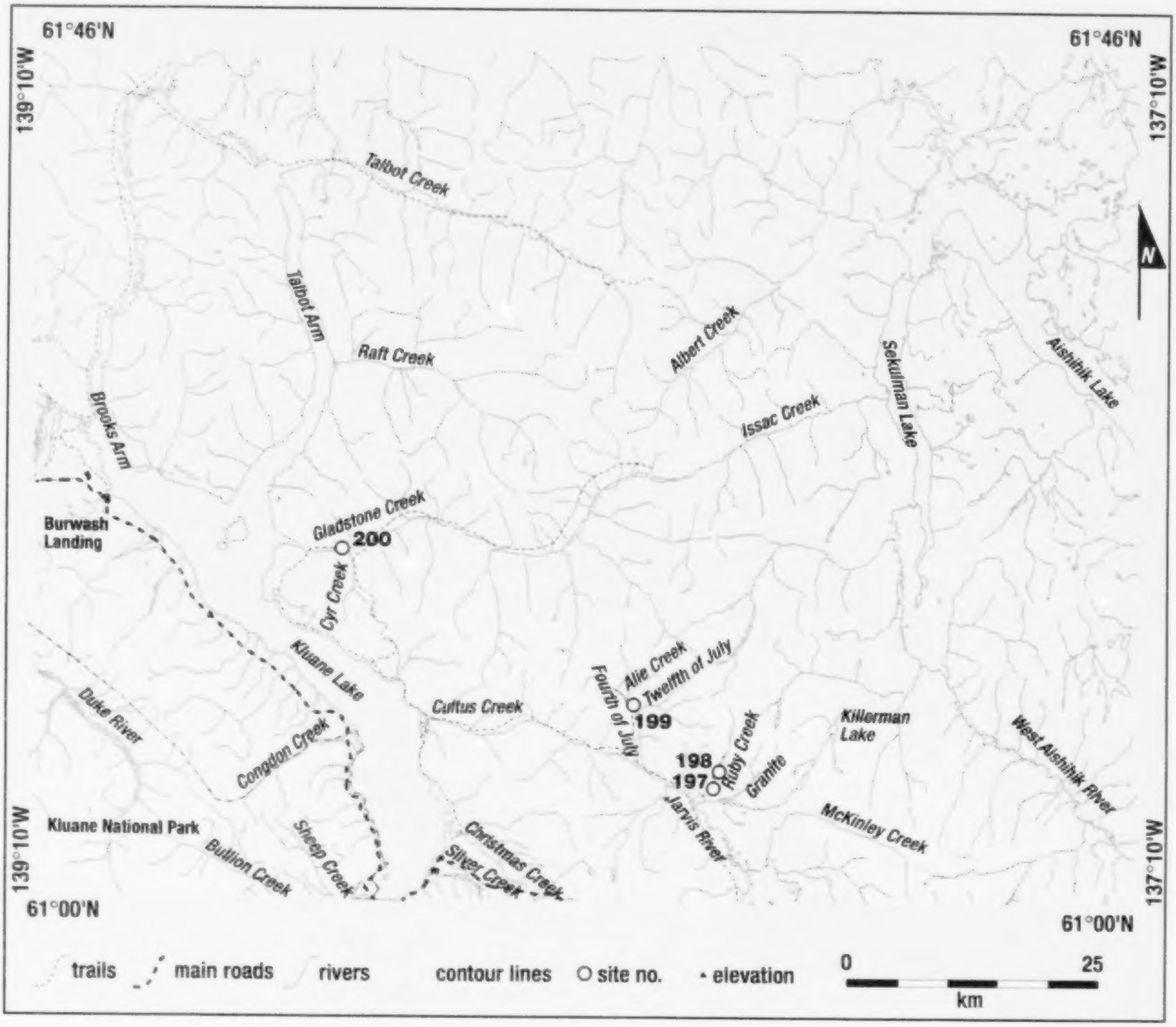
Mining Cuts The majority of mining cuts were located on the left limit.

Water Supply and Treatment Water was obtained from Quill Creek with a pump that was equipped with two 3-inch suction hoses. The effluent was treated with a series of settling ponds that numbered between two and four ponds.

Comments This site was covered by water licence PM96-033 between the years of 1998 and 1999. In 2000, water licence PM99-042 was issued for work at this site.

GLADSTONE
PLACER AREA

SITES 197-200


61°46'N
139°10'W
61°46'N
137°10'W
Talbot Creek
Talbot Arm
Raft Creek
Albert Creek
Sekulman Lake
Aishihik Lake
Brooks Arm
Issac Creek
Burwash Landing
Gladstone Creek
200
Cyr Creek
Kluane Lake
Alie Creek
Twelfth of July
Fourth of July
199
Cultus Creek
Duke River
Congdon Creek
198
197
Ruby Creek
Granite
Killerman Lake
West Aishihik River
Jarvis River
McKinley Creek
Kluane National Park
Bullion Creek
Sheep Creek
Christmas Creek
Silver Creek
139°10'W
61°00'N
137°10'W
61°00'N
N
trails
main roads
rivers
contour lines
site no.
elevation
0
25
km

LEGEND

197..... Brad Mackinnon, Ruby Creek
198..... Brewster & Strand, Ruby Creek
199..... Sota Computing, Fourth of July Creek
200 .... Alan Dendys, Gladstone Creek

RUBY CREEK 115H/4

Brad MacKinnon	61°07'N 137°55'W
Water Licence: PM97-018	1998, 2000, 2001, 2002
Gladstone Placer Area	**Site no. 197**

Operation/Location Mr. MacKinnon has been mining on the left limit of Ruby Creek immediately above Mr. Brewster, working in the same cut since 2000. All work was completed by Mr. MacKinnon.

Equipment/Function A John Deere 750 bulldozer was used for stripping, stockpiling and moving tailings. A Bucyrus Erie 15H excavator was used to feed material into the sluice plant.

Wash Plant The wash plant was made up of a 4-foot by 6-foot vibrating screen with ⅞-inch mesh. A 6-foot run of Hungarian riffles is followed by a 12-foot long by 3-foot wide section of expanded metal.

Ground Description Most big rock was located at the surface followed by approximately 4 feet of loose, sandy gravel. The remainder was more clay laden and is a matrix of broken rock and some rounded creek gravels.

Mining Cuts A cut was made in 2002 and 3,400 cubic yards of material were removed. All material that was removed was sluiced.

Water Supply and Treatment Water was obtained from Ruby Creek with the use of a Gorman Rupp, 3-cylinder, 4-inch pump that produces 500 imperial gallons of water per minute. The settling facility consisted of two ponds with a total capacity of 40,000 cubic feet and the effluent was returned to Ruby Creek once settled. During drier periods the water was recycled.

Gold The gold recovered was rough and spongy looking with some crystallization. Quartz was often associated with the gold. The fineness is 835.

Comments Permafrost was encountered consistently at a depth of 8 feet. Material was progressively removed as it thawed. Vegetation was comprised of willow and was piled and burned. No topsoil was encountered on the claim worked in 2002.

RUBY CREEK 115H/4

Dale Brewster and Diane Strand	61°08'N 137°52'W
Water Licence: PM00-208	1998, 1999, 2002
Gladstone Placer Area	**Site no. 198**

Operation/Location Mr. Brewster was mining on the right limit of lower Ruby Creek in the 2002 season. The number of personnel were one miner and one camp attendant and a four- to eight-hour daily shift was run.

Equipment/Function A P&H excavator with a ¾-yard bucket was used for stripping and stockpiling. A JCB wheeled backhoe with a ¼-yard bucket was used for feeding the sluice plant. Fuel was stored in 45-gallon drums.

Wash Plant The wash plant consisted of a 5-foot by 4-foot by 6-foot dump hopper with a 6-foot by 4-foot by ¾-inch screen deck, a 10-foot run of punched metal and a 16-inch by 3-foot riffle run.

Ground Description Average overall depth of overburden was 16 to 18 feet, comprised mostly of fine gravels. The bedrock was wavy. Clay seams were encountered below the stream channel.

Mining Cuts One cut was made during the 2002 operating season.

Water Supply and Treatment Water was obtained from Ruby Creek through the use of either a five horsepower 2-inch Honda pump or a 16 horsepower 4-inch pump which produced 400 imperial gallons of water per minute. The treatment of the water was accomplished through the use of one settling pond. There was no visible discharge into Ruby Creek.

Gold A mixture of either flat, smooth or chunky gold was obtained, mostly at the 60 mesh size and bright in appearance. Some 2-gram nuggets were found.

Comments The valley was relatively narrow with moderate slopes in the area being mined. Work in 2002 was primarily concentrated on removing overburden with a limited amount of restoration work. Water Licence PM95-101 was issued to Mr. Brewster and Ms. Strand to cover the mining activity that occurred in 1998 and 1999.

FOURTH OF JULY CREEK 115G/1

Sota Computing Systems Ltd.	61°10'N 138°03'W
Water Licence: PM99-033	1999, 2000, 2001, 2002
Gladstone Placer Area	**Site no. 199**

Operation/Location Since moving to Fourth of July Creek in 1999, Mr. J. Fischer has mined on the left limit of Fourth of July Creek between Eva Creek to the north and Twelfth of July Creek to the south. Three miners and one camp personnel were employed on a 24-hour shift.

Equipment/Function The equipment used during the past four years consisted of a 6-foot floating trommel, a Hyundai 320 excavator for feeding the plant, a Hyundai 320 excavator for shifting rock and performing miscellaneous tasks, a Komatsu 355 bulldozer with ripper for stripping and reclamation work, and a 4500-gallon fuel truck.

WASH PLANT A 6-foot trommel floating on pontoons with a 50-foot stacker for tailings was used. Power was provided by a 6-cylinder Isuzu diesel engine that also ran the water pump. Gold was recovered on two 8-foot wide tables with hydraulic riffles.

GROUND DESCRIPTION The ground encountered in this area was comprised of a 12- to 14-foot thick layer of silt and clay over over 4 feet of pay gravel. Large quantities of old tailings from previous operators also had to be moved.

MINING CUTS In 1999, one continuous mining cut was made and 172,630 cubic yards of material were moved. Two cuts were made in 2000. The first cut was 34 feet deep by 145 feet wide by 750 feet long and the second cut was 20 feet deep by 110 feet wide by 650 feet long. In 2001, one cut was made 18 feet wide by 90 feet wide by 1950 feet long. During the 2002 season, a cut 12 feet deep by 150 feet wide by 1950 feet long was constructed.

WATER SUPPLY AND TREATMENT Water was acquired from the dredge pond and was 100% recycled. Typically, the pond size was approximately 150 feet long by 60 feet wide by 18 feet deep and the tailings were used to filter and settle the waste water.

GOLD Approximately 90% of the gold was very tiny nuggets about 16 mesh with very few larger nuggets, none of which were over 9 grams. Fineness averaged between 800 and 820.

COMMENTS All of the silt, clay and old tailings that were stripped and stockpiled were used to cover the levelled tailings on an ongoing basis.

GLADSTONE CREEK 115G/7, 8

Tic Exploration Ltd. (Alan R. Dendys)	61°18'N 138°32'W
Water Licence: PM99-079, LP00063	1998, 1999, 2000, 2001, 2002
Gladstone Placer Area	**Site no. 200**

OPERATION/LOCATION In 1998, Alan Dendys continued his operation on Gladstone Creek approximately two miles upstream from its confluence with Kluane Lake. The valley width in this area is about 500 feet. A floating trommel plant is operated on each side of the creek. Personnel numbered five miners and one camp employee. In 2002, Mr. Dendys operated one floating trommel on the right limit of upper Gladstone Creek for the start of the season and later relocated the floating trommel to the left limit of middle Gladstone Creek. A second floating trommel operated on the left limit of lower Gladstone Creek for the entire 2002 operating season.

Soda Computing's New Zealand-style floating wash plant at Fourth of July Creek.

EQUIPMENT/FUNCTION Two D9H Caterpillar bulldozers were used for site preparation and reclamation work. A Caterpillar 350 excavator (2¾-cubic yard bucket) and a 330 excavator (2½ cubic yard bucket) fed the two floating trommels.

WASH PLANT Two trommels, 5-foot and 6-foot in diameter, were equipped with hydraulic riffles followed by 2-inch flat bar riffles over Nomad matting. Eighty cubic yards per hour were fed into the 6-foot trommel which screened material to 1¼-inch minus. Approximately 40 cubic yards per hour were fed into the 5-foot trommel which screened material to ⅝-inch minus.

GROUND DESCRIPTION The floor of the Gladstone Creek valley is thawed while the benches are permafrost. The coarse glacial gravels average from 10 to 20 feet in depth and the clay bedrock is unconsolidated and wavy. All gravels were sluiced, including about 2 feet of the bedrock. Stripped overburden from the banks was stockpiled and used for restoration and reclamation.

MINING CUTS Over the last four years, Mr. Dendys completed a diversion channel approximately 1¼ miles in length. Two cuts were completed, each about 1500 feet long by 200 feet wide and 10 to 20 feet in depth.

WATER SUPPLY AND TREATMENT Water was acquired by gravity ditch from Gladstone Creek to supply the required dredge ponds to float the trommels used in this out-of-stream operation. Each pond was 200 feet by 50 feet by 20 feet deep at any given time. The ponds were restored and reclaimed on an annual basis. Effluent was filtered through hundreds of feet of settling pond before discharging, by seepage, back into the creek.

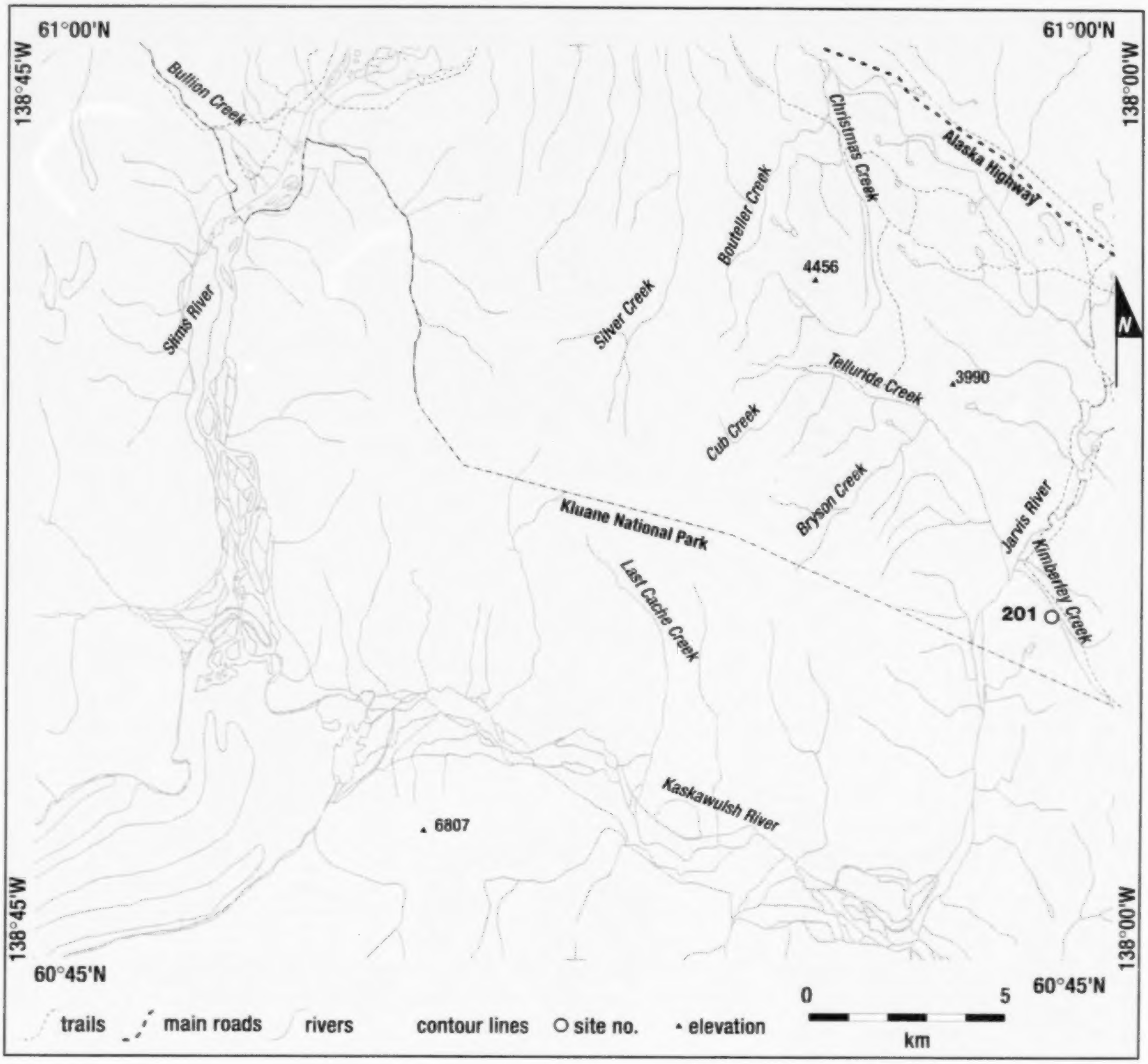
GOLD Gold varied from flat and round to rough and chunky. Sixty percent was finer than 60 mesh, 35% between 10 and 60 mesh and 5% was greater than 10 mesh. The fineness of the gold was 830.

COMMENTS Tic Exploration Ltd. was awarded the Robert E. Leckie Award for Outstanding Placer Mining Reclamation Practices from Indian and Northern Affairs Canada during its first year of presentation in 1999. It was cited as being the finest example of progressive placer mining restoration work in the Whitehorse Mining District.

Gladstone Creek operation.

KIMBERLEY
PLACER AREA

SITE 201


61°00'N
138°45'W
61°00'N
138°00'W
Bullion Creek
Slims River
Silver Creek
Bouteiller Creek
Christmas Creek
Alaska Highway
4456
N
Telluride Creek
3990
Cub Creek
Bryson Creek
Jarvis River
Kimberley Creek
Kluane National Park
Last Cache Creek
201
Kaskawulsh River
6807
138°45'W
60°45'N
138°00'W
60°45'N
0
5
km
trails
main roads
rivers
contour lines
site no.
elevation

LEGEND

201 .... Claire and Pat Sawyer, Kimberley Creek

KIMBERLEY CREEK 115B/16

Claire and Pat Sawyer	60°50'N 138°04'W
Water Licence: PM96-063	1998, 1999, 2000, 2001, 2002
Kimberley Creek Placer Area	**Site no. 201**

OPERATION/LOCATION In 1998, mining began on the left limit of Kimberley Creek, moving to the right limit towards the end of the 1998 season. The Sawyers have mined on the right limit since then. The personnel that have been employed at this mine consist of Claire and Pat Sawyer. A typical daily shift consisted of eight hours.

EQUIPMENT/FUNCTION A D6C Caterpillar bulldozer was used to build road and push tailings. A 45-ton Linkbelt excavator was used to strip the overburden, mine and also feed the 4-foot trommel.

WASH PLANT The wash plant used was a 4-foot diameter by 14-foot long diesel-powered trommel and stacker. The minus 1-inch material went to a 24-inch by 24-inch hydraulic jig. Oversize tailings were disposed of by the stacker belt. Water was supplied by an AC 5-inch intake by 4-inch output pump, powered by a 4-cylinder gas engine capable of producing 350 imperial gallons of water per minute.

GROUND DESCRIPTION The valley bottom of the area mined was approximately 120 feet wide with 90-foot wide by 10-foot high benches on both the right and left limits of Kimberley Creek. Soft clay gravel pay, 1 to 4 feet in thickness, was found overtop of wavy bedrock. Overburden ranged between 5 feet and 30 feet in thickness. Frost-free ground was found 10 feet above Kimberley Creek.

MINING CUTS One cut was made in 2002 that was 30 feet wide by 300 feet long by 15 feet deep.

WATER SUPPLY AND TREATMENT Water was obtained from Kimberley Creek. The main settling pond was proposed to be 30 feet wide by 30 feet long by 6 feet deep with 3 feet of freeboard. At times, several other smaller ponds were used to assist in the retention time.

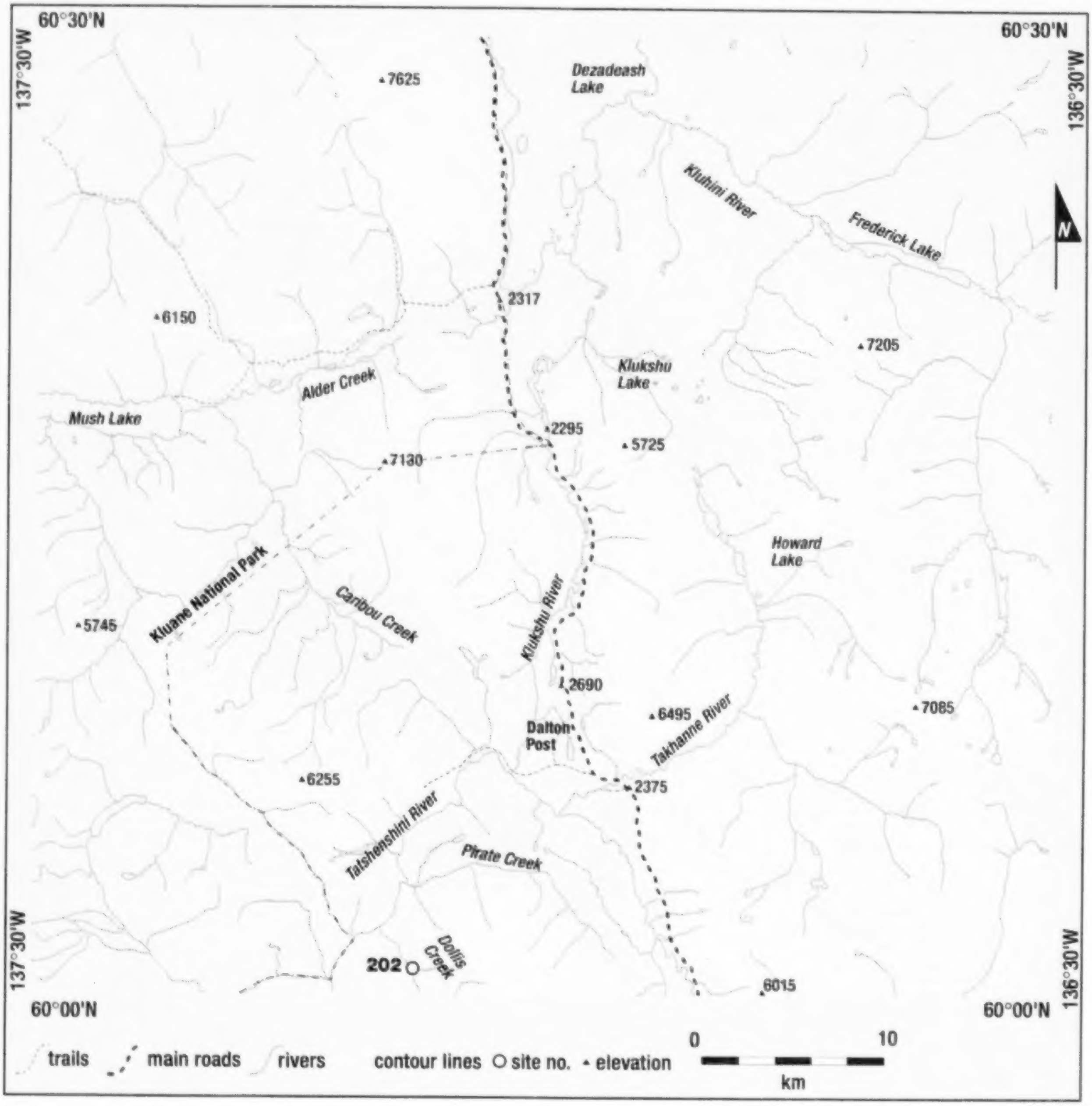
GOLD The gold was angular and chunky with the largest nugget weighing 1¼ ounces. Thirty percent of the gold was fine. Fineness of the gold was 860.

COMMENTS Flash floods were encountered periodically in the Kimberley Creek valley. Tailings were pushed to a two to one slope.

DOLLIS CREEK

PLACER AREA

SITE 202



60°30'N
137°30'W
60°30'N
136°30'W
7625
Dezadeash Lake
Kluhini River
Frederick Lake
N
2317
6150
7205
Klukshu Lake
Alder Creek
Mush Lake
2295
5725
7130
Howard Lake
Kluane National Park
Caribou Creek
Klukshu River
5745
2690
6495
Takhanne River
7085
Dalton Post
6255
2375
Tatshenshini River
Pirate Creek
Dollis Creek
202
6015
137°30'W
60°00'N
60°00'N
136°30'W
trails
main roads
rivers
contour lines
site no.
elevation
0
10
km

LEGEND

202 .... Jerry Reid, Dollis Creek

DOLLIS CREEK 115A/03

Jerry Reid	60°02'N 137°10'W
Water Licence: PM97-074	1998, 1999, 2000
Dollis Creek Placer Area	**Site no. 202**

Operation/Location The operation is located above the waterfalls on Dollis Creek. Mr. Reid spent the first part of the 1998 mining season constructing the diversion on Dollis Creek and the settling facility. Mining commenced towards the end of the 1998 season and the site was also mined during 1999 and 2000.

Equipment/Function Three R20 rock trucks were used to transport the pay material to the trommel which was located on a bench on the right limit. A Yutani excavator was used to load the rock truck and do minor stripping. A 988 Caterpillar loader was also used for a variety of functions.

Wash Plant The wash plant used on this operation was a 7½-foot diameter by 60-foot long trommel.

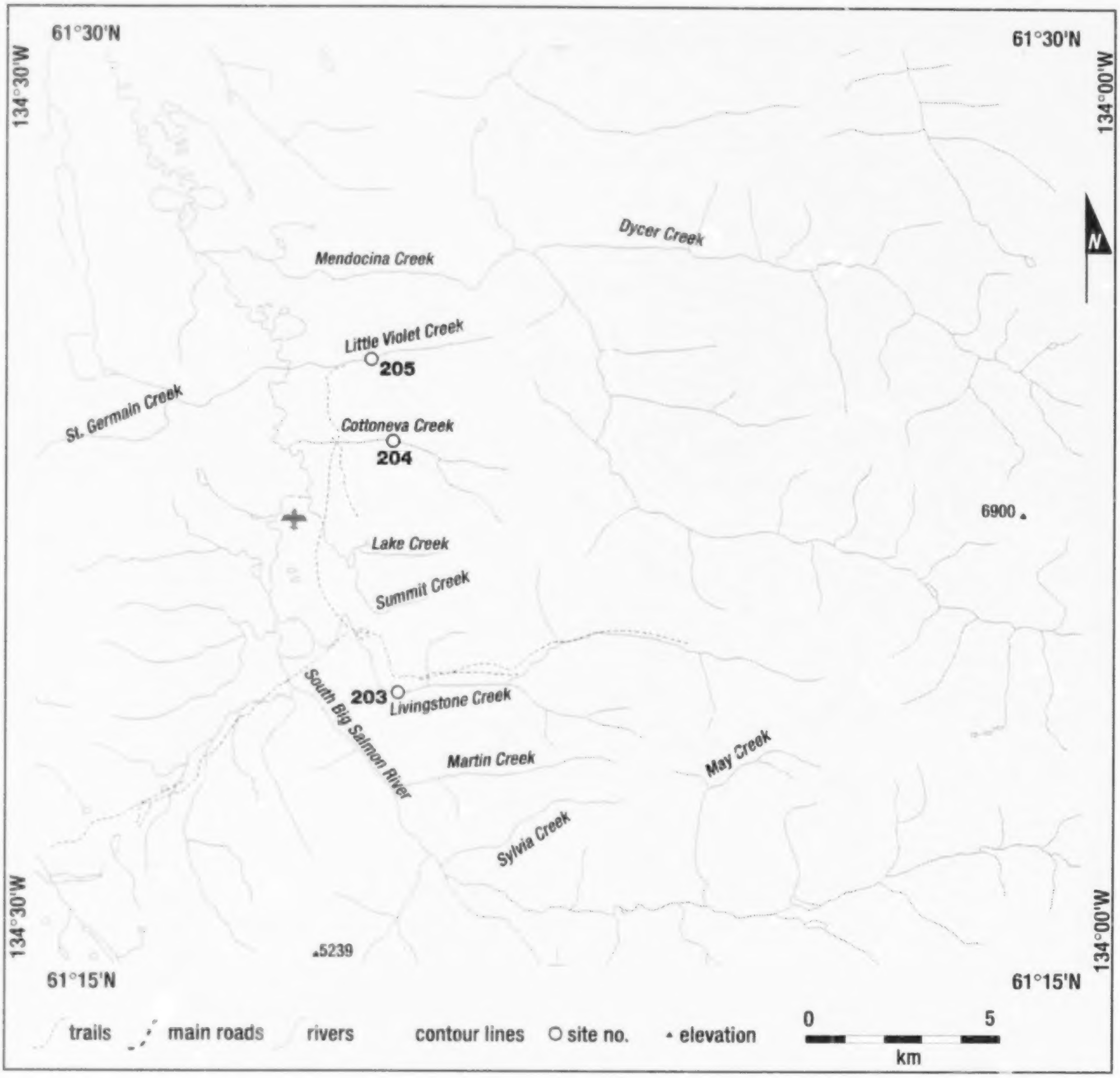
Ground Description The use of the bench on the right limit provided ample area for the set up of the camp and trommel. Dollis Creek was diverted up against a bench on the left limit and the settling facility and cut were made on the right limit. Glacial till with 3-foot to 10-foot boulders comprised the pay zone which was located over 3 feet to 6 feet of false bedrock (clay).

Mining Cuts One cut, 100 feet wide by 350 feet long by 12 feet deep, was made on the right limit between 1998 and 2000.

Water Supply and Treatment Water was obtained from the settling ponds and was recycled. Make-up water was obtained from Dollis Creek. An International powered pump, capable of producing 1250 gallons per minute, was used to supply water to the trommel. Two settling ponds, 150 feet by 150 feet each, were used.

Gold The gold obtained was generally smooth and rice-size, mixed with some rougher nuggets. Fineness was 960.

LIVINGSTONE
PLACER AREA
SITES 203-205


61°30'N
61°30'N
134°30'W
134°00'W
Dycer Creek
Mendocina Creek
Little Violet Creek
205
St. Germain Creek
Cottoneva Creek
204
6900
Lake Creek
Summit Creek
203
Livingstone Creek
South Big Salmon River
Martin Creek
May Creek
Sylvia Creek
5239
134°30'W
134°00'W
61°15'N
61°15'N
N
trails
main roads
rivers
contour lines
site no.
elevation
0
5
km

LEGEND

203 .... Max Fuerstner, Livingstone Creek
204 .... Max Fuerstner, Cottoneva Creek
205 .... Agamemnon Fishing Co. Ltd., Little Violet Creek

LIVINGSTONE CREEK 105E/8

Max Fuerstner	61°20'N 134°16'W
Water Licence: PM97-065	1998, 1999
Livingstone Placer Area	**Site no. 203**

Operation/Location Max Fuerstner, with one other miner and one camp personnel, worked in-stream on Livingstone Creek.

Equipment/Function A D-9 bulldozer was used to strip overburden with a 7-yard excavator feeding the wash plant. A 966 Caterpillar loader was used for tailings removal and yard work.

Ground Description Pay gravels removed from the right limit of Livingstone Creek were processed instream, with overburden stockpiled on the right limit.

Mining Cuts One continuous cut was mined on the right limit of Livingstone Creek.

Water Supply and Treatment Total creek flow of Livingstone Creek was diverted into a large settling facility located on the Ghost Claims on the left limit, immediately downstream of the mine area. A discharge from the settling facility did not occur.

Comments All equipment and materials have been removed from the site. Restoration work has been completed. This licence and approval expires on May 1, 2003 and should be able to be signed off at that time.

COTTENEVA CREEK 105E/8

M. Fuerstner	61°24'N 134°19'W
Water Licence: PM97-058	1998, 1999, 2000, 2001
Livingstone Placer Area	**Site no. 204**

Operation/Location Mr. Fuerstner with the assistance of one to two other miners and one camp personnel mined Cotteneva Creek from 1998 to 2000. In 2001, the final restoration work was finished early in the season and the site was signed off and abandoned.

Equipment/Function An Hitachi excavator was used to load two Terex rock trucks which stockpiled the pay materials at the processing plant. The excavator then fed the processing plant. A Terex bulldozer and loader were used for removing tailings, stripping overburden and pushing to the excavator.

Water Supply and Treatment Water was acquired from a small instream reservoir using a pump which fed the wash plant. The effluent flowed down the mined-out reach of Cotteneva Creek and then was diverted into a series of natural sink holes to the final constructed settling pond adjacent to the South Big Salmon River. There was not a discharge to the South Big Salmon River.

LITTLE VIOLET CREEK 105E/8

Agamemnon Fishing Co. Ltd.	61°25'N 134°21'W
Water Licence: PM98-021	1998, 1999, 2000, 2001
Livingstone Placer Area	**Site no. 205**

Operation/Location Wilf Phillips and his wife spent two weeks on the site in 1998 preparing an area on the left limit of Little Violet Creek to place a camp for the next season. In the 1999 season, Wilf Phillips, two mechanics and two camp personnel spent the late summer bringing a camp and equipment on-site. Equipment repairs took up the majority of the season. In 2000, three miners and two camp personnel worked a 12-hour shift. In 2001, again three miners and two camp personnel worked a 10 to 12-hour shift, repairing equipment, upgrading settling facilities and removing overburden. The wash plant was not used in the 2000 season. In 2002, three miners and two camp personnel worked a 12-hour shift doing equipment repairs and sluicing for the last month. On the last day on-site, the generator caught fire and burned the shop to the ground with substantial loss which will require cleanup, rebuilding and reorganization in the 2003 season.

Equipment/Function A Proclain shovel, Hitachi UH16 excavator and two Volvo 861 ore trucks removed overburden from the site and hauled pay gravels to the processing plant. A 950 and a 966C loader fed the processing plant and removed tailings. A D8K or D9H bulldozer was used for various activities as required.

Wash Plant The processing plant was a Torgerson 2½-inch screen plant onto a ¼-inch screen deck. The ¼-inch minus goes into a 20-inch Knelson concentrator with tailings being run through the sluice box.

Ground Description There is 10 feet of glacial till over 2 feet of fine orange sand, followed by 10 feet of blue clay, with 30 feet of gravel on bedrock.

Water Supply and Treatment Water is acquired by gravity feed through a 6-inch pipe with 80 feet of head. Effluent flows into natural sink holes and percolates into the ground without a discharge.

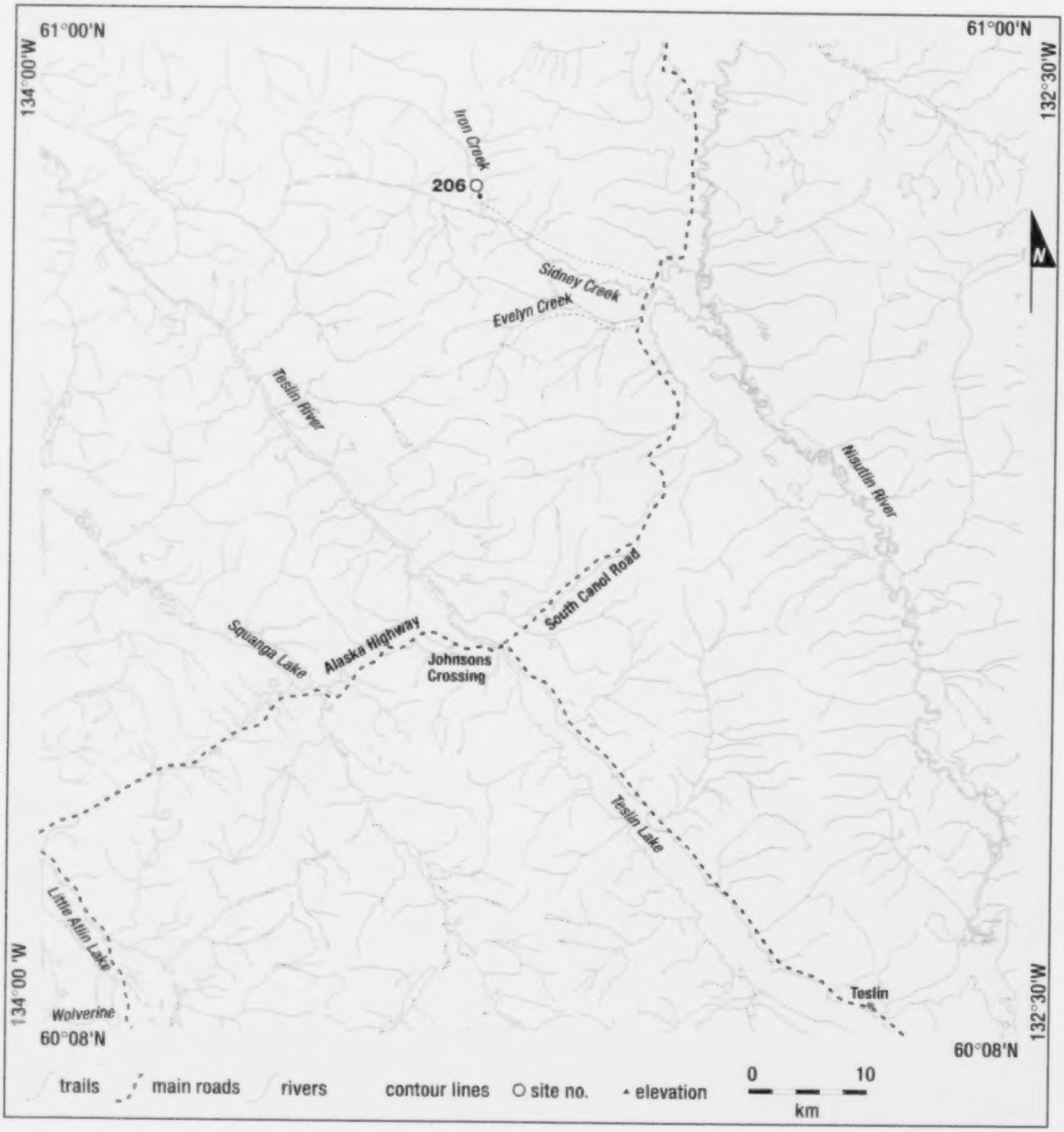
Gold Fineness is 866.

Agamemnon Fishing Co. Ltd. on Little Violet Creek.

SIDNEY CREEK

PLACER AREA

SITES 206


61°00'N
61°00'N
134°00'W
132°30'W
Iron Creek
206
Sidney Creek
Evelyn Creek
Teslin River
Nisutlin River
South Canol Road
Squanga Lake
Alaska Highway
Johnsons Crossing
Teslin Lake
Little Atlin Lake
Wolverine
Teslin
134°00'W
132°30'W
60°08'N
60°08'N
N
trails
main roads
rivers
contour lines
site no.
elevation
0
10
km

LEGEND

206 .... Don and Ronald Edzerza, Iron Creek

IRON CREEK 105C/14

Don and Ronald Edzerza	60°55'N 133°19'W
Water Licence: PM01-234	2002
Sidney Creek Placer Area	**Site no. 206**

Operation/Location One test pit was excavated on the left limit of Iron Creek, pay gravels were stockpiled and the test pit was used as a settling pond to sluice back into.

Equipment/Function A New Holland EC215 excavator was used to strip, stock pile pay gravels and feed the trommel.

Wash Plant A 3-foot diameter trommel with a pipe grizzly and dump box was used to process pay materials.

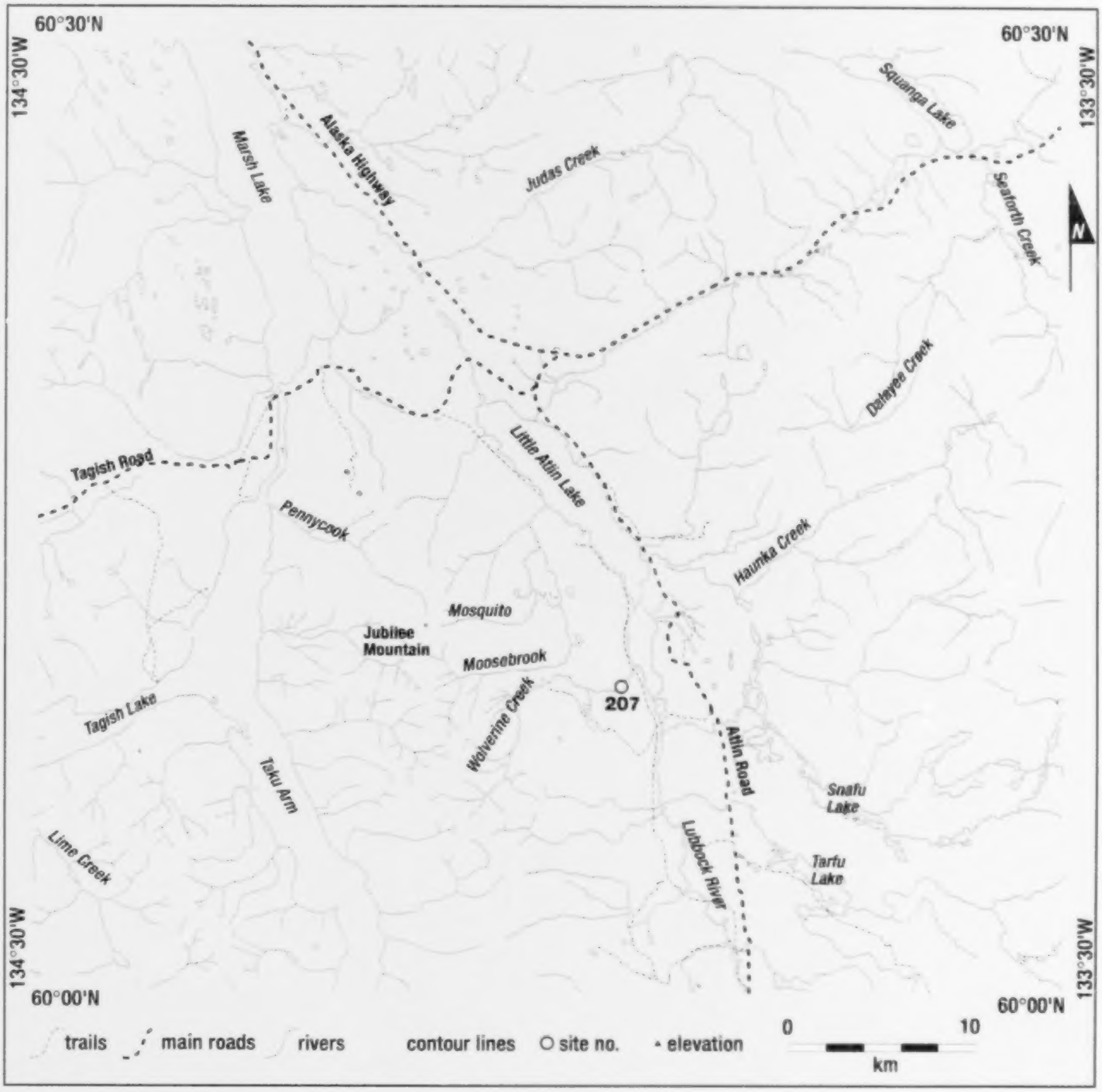
Mining Cuts One test pit was excavated and processed in the 2002 season.

Water Supply and Treatment A pump was used to supply trommel with water directly from Iron Creek. The effluent went back into the test pit and there was no evidence of a discharge.

Operation on Iron Creek.

LITTLE ATLIN
PLACER AREA

SITE 207


60°30'N
134°30'W
60°30'N
133°30'W
Squanga Lake
Marsh Lake
Alaska Highway
Judas Creek
Seaforth Creek
N
Dalayee Creek
Little Atlin Lake
Tagish Road
Pennycook
Haunka Creek
Mosquito
Jubilee Mountain
Moosebrook
Wolverine Creek
207
Tagish Lake
Atlin Road
Taku Arm
Snafu Lake
Tarfu Lake
Lime Creek
Lubbock River
134°30'W
60°00'N
133°30'W
60°00'N
trails
main roads
rivers
contour lines
site no.
elevation
0
10
km

LEGEND

207 .... D. Hrehirchec & C. Cook, Wolverine Creek

WOLVERINE CREEK 105D/1

D. Hrehirchec and C. Cook	60°10'N 134°00'W
Water Licence: PM01-257	1999, 2000, 2001, 2002
Little Atlin Placer Area	**Site no. 207**

Operation/Location Two miners worked this site on a part-time basis. In 1999, some limited testing was done on the left limit. In 2000, mining took place on the left limit of Wolverine Creek, diverting the creek to the right limit. At the end of the 2000 season all restoration work had been accomplished and the site left in a stable manner. In 2001, the equipment was removed from the site due to little activity and PM98-067 expired. Under PM01-257, in the 2002 season, the equipment was returned to the site and a small test pit was dug on the left limit of Wolverine Creek, adjacent the camp.

Equipment/Function A small tire loader with a backhoe attachment was used for mining activity on the site.

Wash Plant A dump box fed to a grizzly and then into a long tom.

Water Supply and Treatment A gravity feed ditch from Wolverine Creek fed a small reservoir. A pump with intake in the reservoir fed the processing plant. Effluent was treated in a small settling pond prior to flows returning to Wolverine Creek.

D. Hrehirchec and C. Cook operation on Wolverine Creek.

Yukon placer creeks: Baseline surveys from 1898 to 2003

Stream	Tributary to...	Year	Surveyor	plan no.	Microplan no.
Adams Creek	Bonanza Creek	1901	McPherson	12066	2796
Agate Creek	Barker Creek	1901	Gibbon	34670	3899-902
Alberta Creek	Walhalla Creek	1912	Kitto	34676	2476
Allgold Creek	Klondike River	1902	Gibbon	9824	2809
Allgold Creek	Flat Creek	1983	Thomson	68972	10243
American Gulch	Bonanaza Creek	1901	McPherson	12069	2795
Back Creek	Nisling River	1912	Dickson	20050	2001
Barker Creek	Stewart River	1906	Gibbon	34669-70	2477,3892
Barlow Creek	Clear Creek	1913	Kitto	34673	2517
Barlow Creek (1-3)	Clear Creek	2003	Friesen	pending	pending
Barney Pup	Clear Creek	1905	Gibbon	18089	3043-44
Battleford Creek	Mayo Creek	1904	McPherson	11490	3414
Bear Creek	Klondike River	1902	Gibbon	9825	2810
Bear Creek (0-11)	Klondike River	1985	Thomson	70176	10575
Bedrock Creek	Sixtymile River	1907	Gibbon	17241	2454-56
Belcher Gulch	Klondike River	1907	Gibbon	17319	2794
Beliveau Creek	Duncan Creek	1903	Rinfret	10178	3447
Big Gold Creek	Sixtymile River	1907	Gibbon	17241	2454-56
Big Gold Creek	Sixtymile River	1980	Parnell	68648	10127
Bismark Creek	Montana Creek	1902	McPherson	10179	2483-84
Black Creek	Montana Creek	1902	McPherson	10179	2483-84
Black Hills Creek	Stewart River	1901	Gibbon	9542	2453
Black Hills Creek	Stewart River	1999	Lamerton	82131	14076
Blueberry Creek	Thistle Creek	1902	McPherson	10390	2457-58
Bonanza Creek	Klondike River	1897	Ogilvie	8284	3865
Bonanza Creek	Klondike River	1901	McPherson	10285	2799
Bonanza Creek	Klondike River	1901	McPherson	10294	2800
Bonanza Creek	Klondike River	1933	Dickson	FB27150	7567-78
Bonanza Creek	Klondike River	1971	McDonald	58479	
Bonanza Creek	Klondike River	1979	Brennan	67119	9841
Bonanza Creek	Klondike River	1981	Aucoin	68163	3687
Bonanza Creek 67118	Klondike River	1989	Underhill	70252	10053
Bonanza Creek Stn 7	Klondike River	1993	Iles	75022	12087
Boucher Creek	Sixtymile River	1902	Cautley	9558	7707
Boulder Creek	Bonanza Creek	1898	Gibbon	9603	2818
Bourdeleau Gulch	Hunker Creek	1902	Cautley	9558	7707
Box Creek	Steele River	1902	McPherson	10179	
Bullion Creek	Slims River	1904	Dickson	FB7856	7557
Burwash Creek	Kluane River	1906	Dickson	12759-61	1702-3,2819
Butler Gulch	Boucher Creek	1902	Cautley	9558	7707
Cabin Creek	Nansen Creek	1912	Dickson	20053	1712-13
California Gulch	Bonanza Creek	1902	McPherson	10179	2483-84
California Creek	Sixtymile River	1914	Kitto	34674	2753-84

Stream	Tributary to...	Year	Surveyor	plan no.	Microplan no.
Caribou Creek	Dominion Creek	1904	Gibbon	FB7857	7710-11
Cascade Creek	Mayo Lake	1904	McPherson	11491	2561
Centre Creek	Nisling River	1912	Dickson	20053	1712-13
Childs Gulch	Black Hills Creek	1908	Gibbon	18090	2453
Christal Creek	McQuesten River	1903	McPherson	10239	3417
Clarke Creek	Scroggie Creek	1912	Kitto	34676	3476
Clear Creek	Stewart River	1905	Gibbon	18089,91	3052-3,3043-4
Clear Creek	Stewart River	1913	Kitto	34673	
Clear Creek, Left Fork	Stewart River	1985	Iles	70174	10576
Conglomerate Creek	Montana Creek	1902	McPherson	10179	2483084
Cottoneva Creek	S. Big Salmon River	1902	McPherson	10359	1726
Courtland Creek	Nansen Creek	1912	Dickson	20053	1712-13
Cripple Creek	Yukon River	1986	Dupuis	70536	10711
Dago Gulch	Hunker Creek	1907	Green	FB9102	2822
Dion Gulch	Yukon River	1908	McPherson	FB11657	7748
Discovery Gulch	Black Hills Creek	1908	Gibbon	18090	2453
Dolly Creek	Nansen Creek	1912	Dickson	20053	1712-13
Dome Creek	Nisling River	1912	Dickson	20053	2001
Dominion Creek	Indian River	1900	Coté	9172	4643
Dominion Creek	Indian River	1902	Gibbon	10190	2770
Dominion Creek	Indian River	1918	Hawkins	FB15614	2813
Dominion Creek	Indian River	1981	Welter	68166	3688
Dominion Creek	Indian River	1983	Aucoin	69030	10241
Dominion Creek	Indian River	1984	Aucoin	69639	10377
Dominion Creek, Ext.	Indian River	1986	Mitchell	70929	10776
Dublin Gulch	Haggart Creek	1903	McPherson	10289	3054
Dublin Gulch	Haggart Creek	1980	Parnell		
Duncan Creek	Mayo River	1903	McPherson	10177	3418
Duncan Creek	Mayo River	1903	Rinfret	10178	3447
Duncan Creek	Mayo River	1903	Barwell	58577	
Dutton Pup	Eighty Pup	1985	Gray	70167	10543
Edmonton Creek	Mayo Lake	1904	McPherson	11490	3414
Eight Pup	Mayo Lake	1901	Gibbon	9608,9613	2802,07
Eighty Pup	Hunker Creek	1901	Gibbon	9609	2803
Eighty and Dutton Pup	Hunker Creek	1985	Gray	70167	10543
Eldorado Creek	Bonanza Creek	1901	McPherson	9614-5	2808
Eldorado Creek	Bonanza Creek	1901	McPherson	9604	2873-74
Eldorado Creek	Bonanza Creek	1905	Gibbon	180091	3052-53
Eldorado Creek	Bonanza Creek	1933	Dickson	39900	
Eldorado Creek	Bonanza Creek	1982	Aucoin	68494	10108
Eliza Creek	Nansen Creek	1912	Dickson	20052	2001
Eureka Creek	Indian River	1900	Coté	9394	2827-28
Eureka Creek	Indian River	1902	McPherson		7709
Eureka Creek	Indian River	1902	McPherson	55028	7708
Eureka Creek	Indian River	1902	McPherson	10614	2482
Eureka Creek, L.F.	Indian River	1987	Underhill	71059	11145

Stream	Tributary to...	Year	Surveyor	plan no.	Microplan no.
Examiner Gulch	Bonanza Creek	1908	McPherson	FB11657	7748
Falconer Gulch	Yukon River	1908	McPherson	FB11657	7748
Fifteen Pup	Last Chance Creek	1901	Gibbon	9613	2807
Fiftyone Pup	Barker Creek	1906	Gibbon	34669	2477
Fish Creek	Klondike River	1903	Gibbon	11494	2801
Fisher Creek	Montana Creek	1902	McPherson	10179	2483-84
Five Mile Creek	Sixtymile River	1914	Kitto	34674	2753-54
Flat Creek	Klondike River	1904	Gibbon	FB7857	7710-11
Flat Creek	Klondike River	1983	Thomson	68972	10243
Forty Pup	Duncan Creek	1903	McPherson	10177	3418
Fourth of July Creek	Jarvis River	1913	Dickson	34666-68	1863-64
Fox Gulch	Bonanza Creek	1901	McPherson	12069	2795
French Gulch	Eldorado Creek	1901	McPherson	9615	2808
Gay Gulch	Eldorado Creek	1901	McPherson	9614	2808
Gauvin Gulch	Bonanza Creek	1901	McPherson	12067	2796
Glacier Creek	Sixtymile River	1901	Dumais	FB9545	4443
Glacier Creek	Sixtymile River	1907	Gibbon	17241	2454-46
Glacier Creek	Sixtymile River	1980	Parnell	68648	10127
Glacier Creek	Big Gold Creek	1980	Koepke	69154	10279
Gold Bottom Creek	Hunker Creek	1901	Gibbon	9612	2805-06
Gold Run Creek	Dominion Creek	1902	McPherson	10181	2797-98
Gold Run Creek	Dominion Creek	1981	Welter	68166	3688
Gold Run Creek	Dominion Creek	2000	Lamerton	83386	14646
Goring Creek	Klondike River	1910	McPherson		7560
Granite Creek	Boucher Creek	1902	Cautley	9558	7707
Guysboro Gulch	Klondike River	1907	Gibbon	17319	2794
Haggart Creek	McQuesten River	1903	McPherson	10289	3054
Haggart Creek	McQuesten River	1980	Parnell		
Hattie Gulch	Hunker Creek	1907	Gibbon	17319	2794
Hattie Gulch & 21 Pup	Hunker Gulch	1990	Aucoin	69640	10379
Henderson Creek	Yukon River	1901	Gibbon	9542	2485-86
Henry Gulch	Hunker Creek	1901	Gibbon	9607	2802
Hester Gulch	Hunker Creek	1901	Gibbon	9611	2804
Hester Creek	Hunker Creek	1984	Aucoin	69640	10379
Highet Creek	Minto Creek	1904	McPherson	11489	3055
Highet Creek	Minto Creek	1996	Lamerton	78543	
Hunker Creek	Klondike River	1901	Gibbon	9606-07,11	2802-04
Hunker Creek	Klondike River	1902	Gibbon	10180	2770
Hunker Creek	Klondike River	1902	Gibbon	8636,9824	2831-32,2809
Hunker Creek	Klondike River	1967	Holt	53536	
Hunker Creek	Klondike River	1977	Koepke	65451	9623
Hunker Creek	Klondike River	1980	Aucoin	67557	944
Hunker Creek	Klondike River	1982	Aucoin	68595	10150
Huot Gulch	Boucher Creek	1902	Cautley	9558	7707
Indian River	Yukon River	1900	Coté	9172	4643
Indian River	Yukon River	1934	Dickson	39217-18	2474-75

Stream	Tributary to...	Year	Surveyor	plan no.	Microplan no.
Indian River	Yukon River	1936	Dickson	39321-22	692
Indian River	Yukon River	1938	Dickson	FB24271	7987
Indian River	Yukon River	1981	Koepke	FB8619	1011
Indian River	Yukon River	1981	Welter	68166	3688
Indian River	Yukon River	1982	Koepke	68495	10110
Indian River	Yukon River	1984	Aucoin	69641	10380
Indian River	Yukon River	1986	Iles	70538	10713
Iron Creek	Barker Creek	1906	Gibbon	34669-70	2477,3899-902
Iron and Sidney Creek	Nisutlin River	1988	Lamerton	71815	11144
Isaacs Gulch	Flat Creek	1904	Gibbon	7857	7710-11
Italian Creek	Montana Creek	1902	McPherson	10179	2483-84
Jackson Gullch	Klondike River	1980	Aucoin	67132	9845
Jarvis River	Kaskawulsh River	1913	Dickson	34666-68	1863-64
Jones Gulch	Black Hills Creek	1908	Gibbon	18090	2453
Keystone Creek	Mayo Lake	1903	McPherson	10240	3417
Kitchener Creek	Steele River	1902	McPherson	10179	2483-84
Klaza River	Nisling River	1992	Aucoin	67133	9846
Klondike River	Yukon River	1902	White-Fraser	54370	
Klondike River	Yukon River	1980	Aucoin	67133	9846
Klondike River	Yukon River	1989	Dupuis	72345	11429
Lake Creek	S.Big Salmon River	1902	McPherson	10359	1726
Last Chance Creek	Hunker Creek	1901	Gibbon	9605,08,10	2802,03,07
Last Chance Creek	Hunker Creek	1983	Koepke	69106	10244
Last Chance Creek	Hunker Creek	1985	Gray	70168	10544
Ledge Creek	Mayo Lake	1904	McPherson	11492	2560
Lepine Creek	Rock River	1903	Gibbon	11494	2801,8018
Lightining Creek	Duncan Creek	1902	McPherson	10177	3418,7727
Lightning Creek	Duncan Creek	1903	Barwell	58577	
Lindow Creek	Bear Creek	1902	Gibbon	9825	2810
Lion Gulch	Caribou Creek	1904	Gibbon	FB7857	7710-11
Little Blanche Creek	Quartz Creek	1909	McPherson	FB11660	1425
Little Gold Creek	Big Gold Creek	1980	Parnell	68648	10127
Little Skookum Pup	Bonanza Creek	1901	McPherson	9847	2811
Livingstone Creek	S.Big Salmon River	1902	McPherson	10359	1y26
Lovett Gulch	Bonanza Creek	1901	McPherson	12069	2795
Lovett Gulch	Bonanza Creek	1980	Brennan	67265	mylar
Lucky Creek	Allgold Creek	1902	Gibbon	9824	2809
Magnet Gulch	Bonanza Creek	1901	McPherson	12069	
Mariposa Creek	Scroggie Creek	1912	Kitto	34676	2476
McKay Gulch	Bonanza Creek	1901	McPherson	9847	2811
McRae Gulch	Highet Creek	1904	McPherson	11489	3055
McRae Gulch	Highet Creek	1906	Gibbon	34669-70	2477,3899
Miller Creek	Sixtymile River	1909	McPherson	FB11658	7436
Miller Creek	Sixtymile River	1981	Aucoin	67918	2463
Mint Gulch	Hunker Creek	1901	Gibbon	9606	2802
Minto Creek	Mayo River	1912	Kitto	31763,65	3041-42

Stream	Tributary to...	Year	Surveyor	plan no.	Microplan no.
Montana Creek	Indian River	1902	McPherson	10179	2482-84
Montana Creek	Indian River	2002	Kearney	85729	
Moose Creek	Fortymile River	1907	Gibbon	FB9545	4443
Nansen Creek	Nisling River	1912	Dickson	20051-53	2001,1712-14
Nelson Gulch	Sixtymlie River	1902	Cautley	9558	7707
Nevada Creek	Dominion	1985	Gray	70169	10545
Newbauer Creek	Nisling River	1912	Dickson	20053	1712-13
Nigger Jim Gulch	Bonanza Creek	19091	McPherson	9847	2811
Nineteen Pup	Bonanza Creek	1901	McPherson	9847	2811
No Name Creek	Montana Creek	1902	McPherson	10179	2483-84
Nugget Gulch	Eldorado Creek	1901	McPherson	9614	2808
O'Neill Gulch	Bonanza Creek	1901	McPherson	9847	2811
Parent Creek	Duncan Creek	1903	Rinfret	10178	3447
Portland Creek	Dominion Creek	1986	Gray	70537	10712
Preacher Creek	Barker Creek	1906	Gibbon	34669-70	2477,3899-902
Quartz Creek	Indian River	1900	Coté	9172	4643
Quartz Creek	Indian River	1980	Welter	68165	mylar
Quartz Creek	Indian River	1980	Wrzosek	68165	3020
Rabbit Gulch	Hunker Creek	1907	Gibbon	17319	2794
Randler Gulch	Boucher Creek	1902	Cautley	9558	7707
Rudolph Gulch	Highet Creek	1904	McPherson	11489	3055
Scroggie Creek	Stewart River	1912	Kitto	34676	2476
Seymour Creek	Big Creek	2001	Aucoin	85064	15103
Sharpe Creek	Scroggie Creek	1912	Kitto	34676	2476
Shaw Creek	Nansen Creek	1912	Dickson	20052	2001
Sidney Creek	Nisultin River	1988	Lamerton	71815	11144
Rusk Creek	Nisling River	1912	Dickson	2005	2001
Sixtymile River	Yukon River	1907	Gibbon	17241	2454-56
Sixtymile River	Yukon River	1914	Dickson	34663-65	2755-57
Sixtymile River	Yukon River	1914	Kitto	34674	2753-54
Sixtymile River	Yukon River	1981	Aucoin	67918	2463
Skookum Gulch	Bonanza Creek	1901	McPherson	9847	2811
Slate Creek	Nansen Creek	1912	Dickson	20049	2001
Sock Creek	Klondike River	1903	Gibbon	11494	2801
Spring Gulch	bonanza Creek	1901	McPherson	9847	2811
Steele Creek	Montana Creek	1902	McPherson	10179	2483-84
Steep Creek	Mayo Lake	1904	McPherson	11493	3413
Stevens Creek	Scroggie Creek	1912	Kitto	34676	2476
Stowe Creek	Montana Creek	1902	McPherson	10179	2483-84
Sulphur Creek	Dominion Creek	1912	Kitto	8599-600	7561
Sulphur Creek (16-18)	Dominion Creek	1994	Aucoin	76041	12360
Summit Creek	S.Big Salmon River	1902	McPherson	10359	1726
Summit Creek	Nisling River	1912	Dickson	20053	1712-13
Tenmile Creek	Sixtymile River	1912	Kitto	134675	2477
Thirteen Gulch	Eldorado Creek	1916	Brownlee	FB14861	2812
Thistle Creek	Yukon River	1902	McPherson	10390	2457-58

Stream	Tributary to...	Year	Surveyor	plan no.	Microplan no.
Trail Gulch	Bonanza Creek	1901	McPherson	12069	2795
Twelvemile Creek	Sixtymile River	1914	Kitto	34674	2753-54
Twenty Gulch	Hunker Creek	1907	Gibbon	17319	2794
Twentyone Gulch	Hunker Creek	1907	Gibbon	17219	2794
Vermont Creek	Steele River	1902	McPherson	10179	2483-84
Victoria Gulch	Bonanza Creek	1901	McPherson	12068	2796
Victoria Gulch	Bonanza Creek	1986	Thomson	70173	10578
Victoria Creek	Nisling River	1912	Dickson	20048	1715
Webber Creek	Nansen Creek	1912	Dickson	20053	1712-13
Walhalla Creek	Scroggie Creek	1912	Kitto	34676	2476
Williams Creek	Duncan Creek	1903	McPherson	10177	3418
Williams Creek	Duncan Creek	1903	Rinfret	10178	3447

Conversions and equivalents

LENGTH	
1 centimetre (cm)	= 0.394 inch (in)
1 metre (m)	= 39.4 inches = 1.094 yards (yd)
1 kilometre (km)	= 0.6214 (⅝) mile
1 inch (in)	= 2.54 centimetres (cm)
1 foot (ft)	= 30.48 centimetres
1 yard (yd)	= 0.914 metre (m) = 3 feet
1 mile	= 1.609 kilometres (km) = 1760 yards
AREA	
1 hectare	= 2.471 acres
1 acre	= 0.405 hectare = 4840 square yards
1 square yard	= 0.836 square metre
VOLUME	
1 litre (l)	= 1,000 millilitres (ml) = 1,000 litres = 0.21998 gallon (Imp.) = 0.26417 gallon (US)
1 gallon (Imp.)	= 4.5459 litres
1 gallon (US)	= 3.785 litres
1 cubic yard	= 0.764 cubic metres
WEIGHT	
1 troy pound	= 12 troy ounces
1 troy ounce	= 31.1035 grams = 20 pennyweights = 480 grains
1 pennyweight	= 24 grains
1 grain	= 0.06479 grams
1 gram	= 15.43 grains
1 avoirdupois pound	= 16 avoirdupois ounces = 0.454 kilograms
1 avoirdupois ounce	= 28.35 grams
1 kilogram	= 32.15 troy ounce = 1,000 grams = 2.205 pounds
1 long ton	= 2240 pounds
1 short ton	= 2000 pounds
1 tonne	= 1.102 short tons = 2204.62 pounds

WEIGHT PER VOLUME CONVERSION		
1 ounce/cubic yard	= 40.68 grams/m^3	
1 ounce/ton	= 34.2848 grams/tonne	
GOLD PURITY		
pure gold	= 24 karats	= 1000 fine
91.6%	= 22 karats	= 916 fine
90%	= 21.6 karats	= 900 fine
75%	= 18 karats	= 750 fine
58.3%	= 14 karats	= 583 fine
41.6%	= 10 karats	= 416 fine
GRAIN SIZE		
particles	average diameter in mm	
boulders	greater than 256 mm	
cobbles	64 mm to 256 mm	
pebbles	4 mm to 64 mm	
gravel	greater than 2 mm	
sand	2 mm to 1/16 mm	
silt	1/16 mm to 1/256 mm	
clay	less than 1/256 mm	
TEMPERATURE		
°C = (°F - 32) x .555		
°F = (°C x 1.8) + 32		

MISCELLANEOUS

The following measures are not absolute values but are used by many miners to make working estimates:

1 standard gold pan	= 16" diameter top = 10" diameter bottom = 2.5" depth holds 0.007 cubic yards or 0.005 cubic metres weighs approximately 21 lbs (ordinary gravel)
1 cubic yard	= approximately 143 standard gold pans
weight of ordinary gravel in place	= 2500 to 3000 lbs/cubic yard
specific gravity of ordinary gravel in place	= 1.48 to 1.78 g/cm^3
specific gravity	
gold	= 15.6 to 19.3
garnet	= 3.56 to 4.32
magnetite	= 4.9 to 5.2
pyrite	= 4.0 to 5.2
quartz	= 2.6
platinum	= 19-21
silver	= 9-11
tin	= 6-7.3
1 ounce gold/ton ordinary gravel	= 1.25 to 1.50 ounces/cubic yard
1 gram gold/tonne ordinary gravel	= 1.48 to 1.78 grams/cubic metre
swell factor of ordinary gravels	= 20 to 30% increase in volume

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